THE CULTIVATOR.

NEW "TO IMPROVE THE SOIL AND THE MIND." SERIES.

VOL. II. ALBANY, DECEMBER, 1845. No. 12.

THE CULTIVATOR

Is published on the first of each month, at Albany, N. Y., by LUTHER TUCKER, EDITOR AND PROPRIETOR.

ONE DOLLAR A YEAR.

SEVEN copies for $5—FIFTEEN copies for $10,00—all payments to be made in advance, and free of postage. ☞ All subscriptions to commence with the volume.

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M. H. NEWMAN'S BOOKSTORE, No. 199 BROADWAY, where single numbers, or complete sets of the back volumes, can always be obtained.

"The Cultivator" is subject to newspaper postage only.

Foreign Correspondence.

MR. NORTON'S LETTERS—No. XVIII.

Prof. Johnston's Lectures on the Introduction of the study of Agriculture into Schools.

Laboratory of Ag. Chem. Association,
Edinburgh, Sept. 10, 1845.

L. TUCKER, ESQ.—A year ago, in a letter dated the 24th of this month, I mentioned that Prof. Johnston had just deliverel two lectures to the parochial schoolmasters of Scotland, at their annual meeting, upon the introduction of Agricultural Chemistry into the Parish schools.

Those lectures, as I then mentioned, were received with much approbation, and their permanent effect has been shown by the adoption of this branch of instruction into about 90 schools. This year, the schoolmasters invited Prof. Johnston again to appear before them and give more fully his ideas, as to the kind, extent, and manner, of instruction necessary. In accordance with this request, he on Thursday the 18th, delivered the first of three Lectures, to about 250 of the teachers.

In the commencement, he asked, why is it important that the schoolmaster should teach this branch of knowledge? Because it has become of acknowledged importance that it should be diffused, and because the only way in which this diffusion can be made lasting and universal, is through the rising generation.

"But," he continued, "let it not be understood that it is *chemistry* we want taught; it is only chemistry so far as it is applied directly to Agriculture. More than this would only overload the mind and injure the cause it was intended to serve. To the same end would tend the endeavors of the great mass of teachers to make themselves analytical chemists. They might get far enough to make imperfect researches, and therefore draw incorrect conclusions, but more they could not do without entirely neglecting their other pursuits and duties.

"All that is necessary for the primary schools, is the Catechism. This little work contains the great outlines and divisions of the science, and it imparts a knowledge of those few scientific words and important substances, which the cultivator of the soil must acquaint himself with."

In order to show more fully the plan of this little work, and to exhibit to those unskilled in such matters the methods of performing the experiments therein mentioned, the Professor here took it up, and proceeded through, explaining every point upon which darkness might rest, and performing all of the experiments. These are very simple, but the sight of their performance would enable those who are unaccustomed to chemical manipulation, to perform them much more easily and satisfactorily.

This exposition of the Catechism, occupied three days, and was delivered to deeply attentive and interested auditors. At the conclusion, every doubt seemed to have disappeared from the minds of all present, as to the simplicity and beauty of the great outlines of the science, which had been laid before them. Though in themselves the result of years of labor, guided by the highest scientific intellect, they are given in such a form that any boy of ordinary capacity may understand them. I have lately been in several schools where boys of 12 and 14, not only understood, but applied these principles to such farms as fell under their observation.

Many have acknowledged that much benefit might result from this instruction, but at the same time contended, that it would be more than balanced by the injury done to other studies. This objection is, I think, completely answered by the fact that Prof. Johnston, from the results of actual experience, now recommends that only half an hour a week, be devoted to this branch, and even that only during the last year at school. Of course, each teacher may if he chooses, still farther impress the boys by an occasional Saturday afternoon's walk, over some neighboring farm, making such observations as the state of the land and mode of culture suggest.

At the conclusion of the lectures, Mr. Milne, deputy advocate of Scotland, made a most admirable and eloquent speech, upon the progress of agricultural education, a cause in which he is deeply interested, and which he has most powerfully contributed to forward. He expressed his great gratification at the spirit which prevailed, and the movement which was commencing, among the Scottish schoolmasters; and sketched in graphic language, the improved condition of all classes of the community, when the best system of cultivation should be everywhere adopted. Not only an additional population would be maintained by the increased supply of food, but would be maintained in a greater degree of comfort through the increased demand for laborers.

Prof. Pillans, of Edinburgh University, in seconding a vote of thanks to Prof. Johnston, bestowed upon him a tribute of cordial and well merited praise. He avowed that he had come to these lectures prejudiced against the cause they were intended to advance, but confessed himself to have become an entire convert. "So clear had the whole subject been made, so completely had doctrines founded upon the most abstruse principles of science been simplified, that he could not refrain from expressing his delight. The lecturer, with a scientific mind of the highest order, delighting to grapple with the most difficult problems of nature, had not been for one moment tempted from his object of giving simple instruction. He hoped and believed, that the Scottish schoolmasters, urged by every consideration, would lend their energies seriously to this new task, and maintain that high character which they had always borne."

That the effect of these lectures will be lasting I can

not doubt; the whole body seemed quite unanimous in expressions of approbation.

We were mentioned by Mr. Milne as rivals in the introduction of this new branch of education, and I trust that we shall prove formidable rivals, that our rising generation will take the field so armed with the true principles of cultivation that in 20 years from this time we shall no longer need to look to Scotland as a model. The Scotch would call this American conceit, but they don't know what we can do when we are in earnest.

Very truly yours, JOHN PITKIN NORTON.

ON ARTIFICAL MANURES.

BY PROF. JUSTUS LIEBIG.

[Our friend and correspondent at Giessen, Prof. Horsford, has sent us the following copy of a communication, written by Dr. JUSTUS LIEBIG for the first No. of the "Agricultural Magazine," a work recently commenced in London, and for which the copy-right was secured in England.]

SIR—Twenty-five years ago, when the manufacture of spa and mineral waters began, they met with violent opposition from the members of the faculty, as being deprived of all the good qualities of the natural ones—as wanting in a certain *conditio sine qua non*—in a *spiritus rector*, or vital power, which alone gave them any medicinal qualities. Those times have passed now—Chemistry has demonstrated to a certainty what the constituents of those various waters are, and under what forms and compounds they are united in them. It has succeeded in combining them exactly in the same proportions, and in rendering them not only equal to the natural ones, but even more effective. Only from that time physicians were induced to connect certain effects on the human body with certain elements in the waters, and were enabled, by the light of science, to add more of this element, or more of that; nay, to apply, instead of the waters themselves, the one active element alone, as is, for instance, the case with Iodine in indurations and struma. It is well known, that at this moment there are extensive manufactures of mineral waters in England, in Berlin, in Dresden, in Vienna, &c.

Now, I believe, sir, that the same principle may be applied, partially, at least, to the use of manufactured manures, which, in England, has just been called into existence. Guano, that powerful manure, the efficacy of which, in a judicious application, has been clearly demonstrated by the testimony of the most intelligent farmers, cannot be supplied for a much longer period to come. The rich stores in Chili and Africa must be shortly exhausted. As it is only in very dry countries that it is found, we cannot expect to discover many more places containing it, and what are we *then* to do? My attention has often been directed to the question, whether, according to our experience, and the present state of science, a manure might not be composed which could replace the genuine Guano in its effects, and whether I could not, by a series of experiments point out a way of preparing one equal to it in all its chemical and physical properties? You are well aware, sir, that we know with certainty all the elements of the guano, as well as of the urine and solid fæces of men and animals. In like manner it seems to have verified the opinion which I have laid down in my work on Agriculture, that the salts manufactured in the laboratory have the same effect on the growth of the plants, if they are embodied to the fields, in the same forms in which the animals furnish them in their excrements. This must be evident to every one who knows, that to produce these compounds in the laboratory, the same agencies and means are made use of which are employed by nature. The fabrication of a manure, equal in its composition and effects to the solid and fluid excrements of animals and men, seems to me one of the most essential demands of our time—more especially for a country like England in which from various circumstances, a rational agriculture without a supply of manure in some shape or other, *from without*, seems nearly impossible. Our reasoning will appear the more correct, if we remember how different are the results which have been obtained by the numerous analyses of the different sorts of guano—how little the farmer can depend upon producing from a given *quantity* a certain *effect*, as the latter naturally varies according to the composition of the former. There are scarcely any two samples in the market with the same composition—nay, not even similar. The following may be regarded as the essential constituents of a powerful manure applicable to all sorts of soils:—

Earthy Phosphates.—The most important of these is *Phosphate of Lime*, which occurs in nature as a mineral called *apatite*. It is the principal element in the bones, which, it may be observed, have been found most efficacious if calcined, consequently deprived of their animal matter. The rapidity of the effects of phoshate of lime on the growth of plants depends upon its greater or lesser solubility. Its amount of glue (gelatine) diminishes this solubility if the soil is rich in vegetable matters, which furnish carbonic acid by their decomposition, and which acid is required for rendering the phosphate of lime soluble in water and introducing it into the organism of the plants. In the calcined state the bones act sufficiently quickly; but in those soils in which this cause of solubility is wanting, their action is slower. In my work I had recommended the addition of a certain quantity of sulphuric acid, both in order to render the bones more soluble and to change the neutral phosphate of the bones into gypsum, and into a phosphate which contains more acid (superphosphate of lime.) I have been informed that this advice has been most extensively adopted, that the superphosphate of lime has been found to be a most efficacious manure, and that it forms already a most important article of commerce. A second earthy phosphate, not less important, is the *Phosphate of Magnesia*, which it is well known enters in a still larger proportion than the *phosphate of lime* into the composition of the grain.

The *Alkaline Phosphates*, although not originally found in nature, are important elements of the seeds of grain, of peas, beans, &c. A rational farmer must provide them in sufficient quantities to those plants which require them for their development, from knowing that human excrements increase the produce in grain in a far greater proportion because they *contain* alkaline phosphates, than the animal excrements, in which they *do not exist*.

The *Alkalies* (potash and soda) must be constituents of every rationally composed manure, because by them the original fertile condition of the fields is preserved. A soil which contains the *alkalies* in too small a quantity, is perhaps, fertile for grain; but is not necessarily so for turneps or potatoes, which require a great quantity of alkali. By supplying an alkaline manure, fallows, or the cultivation of those plants which are grown during the time of fallowing, becomes less necessary.

Sulphate of Potash is a constituent of all plants, although in small quantity, as well as *common salt* and *chloride of Potassium* which are found in milk in rather a large proportion. The *salts of lime*, especially *gypsum*, are important nourishment for the leguminous plants. *Silica* is never wanting in all sorts of soils—it is a constituent of all rocks, by the decomposition of which all productive soils are formed, and the cerealia find it every where in sufficient quantity, and in a form capable of being taken up by the plants, *if the alkalies are provided* wherever they are present in too small quantity.

Salts of Ammonia.—It can be regarded as certain, that the azote of the plants is derived, either from the ammonia of the atmosphere, or from the manure which is provided in the shape of animal fluid and solid excrements, and that azotic compounds exercise an effect on the growth of plants, only in so far as they give up their azote in the form of ammonia during their decomposition and decay. We may, therefore, profitably replace all the azotic substances with compounds of ammonia.

Decaying vegetable matters, which contain carbon, are useful to the fields in so far as they provide a source of carbonic acid; but they are not quite indispensable in manure, if the latter be rationally combined, as the atmospheric air is an inexhaustible source of carbonic acid

from which the plants draw their carbon, if in the manure, the mineral substances are provided which are necessary for the assimilation of the carbonic acid. These are the substances which *together* give fertility to the soil; but although each of them may, under certain circumstances, (*viz.*, where the soil is defective in it, or where it is not indifferent to the plant to take up one instead of the other, as, for instance, may be the case with soda instead of potash,) increase the fertility, no *one* of them can be regarded as manure, according to the common meaning of the word, for the simple reason, that only *all of them in certain proportions*, will fulfil the purpose for which the common manure is applied. This purpose is the restoration, or an increase of the original fertility, and by manure we must replace all the elements of the plants which have been taken away in harvest, or which are contained in the plants which we are desirous to cultivate.

What, then, are the constituent elements of the soil which we remove by the straw, seeds, tuberculous roots, stalks, &c., of our plants of culture? It is obvious that we must know these first, in order to *restore* them in sufficient quantities. To this we answer, by giving the analysis of the ashes of plants and their seeds. Hundred weights of the ashes of the following plants contain

	Beans.	Straw of Peas.	Potatoes.	Ashes of Clover.	Hay.
Alkaline Carbonates,.....	29.38	12.43	4.34	31.63	3.0
Carbonate of Lime,.....	39.50	47.81	43.68	41.61	6.9
Phosphate of Lime,.....	6.43	5.15	5.73	11.80	40.8
Phosphate of Magnesia,....	6.66	4.37	7.82	0.91	—
Sulphate of Potash or Soda.	12.40	10.15	—	2.23	8.84
Magnesia,.....	—	—	—	—	21.8
Chloride of Sodium or Potassium,.....	0.28	4.63	2.8	2.27	3.06
Phosphate of Iron, ... Phosphate of Alumina, &c.	—	—	—	—	12.7

In these analyses Silica has not been taken into account, as it is found in all soils, and need not be supplied. One hundred weight of the ashes of potatoes, and the seeds of the following plants, contains

	Potatoes.	Wheat.	Beans (Vicia faba.)
Alkaline Phosphates,.....	15.75	52.98	68.59
Phos. of Lime and Magnesia,	9.00	38.02	28.46
Phosphate of Iron,.....	—	0.67	—
Sulphate of Potash,.....	15 07	—	1.84
Carbonate of Potash and Soda.	51.70	—	—

What is wanting in the 100 of the above analyses is sand, coal, or loss. From these researches it appears, that for stalks and leaves we require other elements than for seeds. The former contain no alkaline phosphates, but they require for their development and growth a rich supply of alkaline carbonates and sulphates. On the other hand the carbonates are entirely wanting in the seeds, but the latter are very rich in phosphates. It is sufficiently obvious that a rational farmer must supply *both*, as well as all the others. If he supplies only phosphates, and does not restore the alkaline carbonates, his soil will become gradually barren—it will be exhausted in those necessary elements for the development of stalks and seeds, without which no formation of seed can be expected. If he supplies the alkalies, lime, and sulphates alone, in a given time he will get no more grain. All constituent elements of the manure, if they are supplied *alone*, have that great defect, that by them the soil is impoverished in other equally important elements. No *one* of itself can maintain the fertility. Keeping this in view, we may easily judge of the comparative value of artificial and natural manures, and all the various *arcana* which have been praised as *panaceas* for exhausted soils.

It is not less easy to understand why the farmers have such different opinions on the relative value of the constituents of manures—why one whose farm is rich in phosphates, produces an uncommon fertility by the application of nitrate of soda, or the supply of alkalies, while another does not see any favorable effect at all—why bones (phosphates of lime) produce in many fields wonders, and are not of the slightest benefit to others, which are deficient in alkalies or alkaline salts. From the composition of animal manures, it results with certainty, that by applying the latter, (solid and fluid excrements of men and animals) we supply to the soil not one but all the elements which have been taken away in the harvest. Fertility is perfectly restored to the field by a corresponding supply of this manure, and it may be increased by it to a certain limit. This will be the more intelligible, if we compare the mineral elements of the urine of horses and cattle with the mineral elements of herbs, straw, roots, &c., of our cultivated plants. It will be found that in their quality they are perfectly identical.

	Urine of a Horse.	Of Another.	Of Oxen
Carbonate of Lime,.....	12.50	31.00	1.07
" of Magnesia, ...	9.46	13.07	6.93
" of Potash,.....	46.09	40·33	77.28
" of Soda,.....	10.33		
Sulphate of Potash,.....	13.04	9.02	13.30
Chloride of Sodium,.....	0.55	—	0.30

These salts in the urine of horses amount to nearly 4 per cent.; in that of oxen to 2½ per cent. of their weights. If we compare the composition of these different sorts of urine with the composition of the straw of peas, beans, and potatoes, of clover and hay, it will at once be obvious, that in stable dung we replace by the urine, the alkaline carbonates which we have removed in harvest. What in this urine, is wanting in phosphates and carbonate of lime and phosphate of magnesia, forms the principal constituent elements of the solid excrements of animals; *both together* (solid excrements and urine) restore the field to its original composition, and thus a new generation of cultivated plants meet with the mineral ingredients necessary for their development. If we farther compare the guano and the fæces of men with the composition of the animal urine, the analysis shows (rf. my book on agriculture) that both are entirely defective in *alkaline carbonates*—they contain phosphates and sulphates as well as chloride of sodium, but no free alkali—they contain phosphate of lime and phosphate of magnesia, in short their elements are in *quality* identical with the important mineral elements of the seeds of wheat, peas, beans, (rf. the analysis.) The urine of swine is in its composition intermediate between the urine of man and horses.

Analysis of the urine of swine.

Carbonate of Potash,.....	12.1	
Phosphate of Soda,.....	19.0	
Sulphate of Soda,.....	7.0	
Chloride of Sodium,.....	53.1	The solid excrements of Swine contain principally phosphate of lime.
" of Potassium, ...		
Phosphate of Lime, ...	8.8	
" of Magnesia,...		
Traces of Iron, ...		

What the practical results of a knowledge of the composition of these manures are, is clear. If it were possible to provide our fields with the dung of swine in sufficient quantity, we would replace by it, in a soil which contains *silica* and *lime*, all the remaining elements of the plants—the field might be made fertile for all kinds of plants—we have in it not only alkaline phosphates, the principal elements of the seeds, but also alkaline carbonates, which are required by the leaves, stalks, and roots. This purpose cannot be attained, however, by manuring with guano or human excrements alone, but perfectly so by stable manure, from its containing alkaline carbonates. If I have said that stable manure contains the mineral elements of the nurture of the plants, exactly in a state and condition in which they are furnished by nature—that a field manured by it resembles the primitive state of America and Hungary, this assertion will not be found exaggerated. It is certain that stable dung contains no alkaline phosphates, but nature does not furnish to the plants these elements even in the most fertile soil, although we find them in large quantity in all the seeds of wild plants. It is obvious, notwithstanding their absence from the soil, that the phosphates are formed in the organism of the plants, and that they originate from the phosphate of lime and magnesia and the supplied alkalies, by an exchange of the elements of both. The alkalies are necessary for forming *alkaline phosphates*, which cannot originate in the phosphate of lime alone. Both together are present in stable dung. In human excrements, and in guano, the alkaline carbonates are entirely wanting. The practice of the farmer, in some places, of supplying to the field not pure guano, but a mixture of it with gypsum, shows clearly that the phosphates of alkaline bases are really formed in the organ

ism of the plants from the phosphate of lime and magnesia, because this mixture (guano and gypsum) contains less phosphate of potash or soda than the guano itself; or, in certain proportions of gypsum, no alkaline phosphates at all; the soluble phosphates in the guano decomposing the gypsum into phosphate of lime and magnesia, and into sulphate of potash. I am far from asserting that we should not provide the fields with alkaline phosphates; the excellent effect of the guano, and of the human excrements, is too well known to question it, and we perceive, from this fact, that plants are in this respect like domestic animals which with a normal food, are healthy and strong, but do not fatten. On the contrary, we know that if we prepare the food of these animals artificially, so as to render it more easily digested and assimilated, they are enabled to consume, in a given time, a greater quantity of it by which all their parts increase in weight. The same happens with plants if we give them their nourishment in a state most appropriated for assimilation; their capability to attract the other elements from the atmosphere increases and their development is accelerated. If we recollect that the favorable effect of guano upon our fields depends on its amount of *ammoniacal salts*, of *alkaline phosphates*, and the *other mineral constituents* of the seeds, but that it is defective in *alkalies*, the principal elements of the *herbs*, *straw*, and *roots*, it is easily understood why the opinions of farmers, on the value of guano as a manure are so very different. On a soil, which is defective in alkalies, its effect is small; on a soil rich in them, it increases the produce in a remarkable degree; but, as I have already observed, the continued application of guano must gradually diminish the fertility of our fields for a number of plants, because the elements of those organs, of the leaves, stalks, roots, &c., without which the plants cannot be developed and cannot produce seeds, are taken off in the harvest without any restoration of them. I think it, therefore, certain, that the stable dung can replace the guano to a certain degree, but not *vice versa*. A rational agriculturist, in using guano, cannot dispense with stable dung.

During my excursions in England, I have repeatedly directed the attention of the agriculturists, as Messrs. Pusey and Miles will, perhaps, recollect, to the necessity of supplying the alkalies, and not merely the phosphates and other salts; by a partial supply the equilibrium of fertility is not restored, and if we supply guano alone, we do not act wisely, because we consume our capital by rich interests, and leave to our children an exhausted soil.

And now, sir, the principles above-mentioned must guide us in the manufacture of an artificial manure. If they are neglected,—if the artificial manure is defective in one or two of the necessary elements,—the farmer in making use of it, will, in a very short time, discover the fact, by the injury he will have sustained from it.

In the manufacture of an artificial manure, it must be kept in view, that the application of stable dung, of human excrements, and of guano, is attended with a great loss, in consequence of the too great solubilty of their most efficacious elements, and this must be prevented by artificial means. This is evident, if we remember those countries from which guano is derived. It is known that the collection and preservation of the excrements on the African islands, and the coasts of Peru and Chili, depend upon the scarcity of rain in those countries. The best sorts of guano contain in fact, more than one half of their weight of soluble salts, which, if exposed to the rain, are in exactly the same condition, as under similar conditions, a heap of *salt*. They dissolve in water, and are removed. Some months of rain would deprive those countries of all their riches. The remainder would have lost the greater part of its fertilizing power. Such effects, however, take place upon the guano with which our fields are manured. Only a small portion of its efficacious elements produce the beneficial effect they are capable of doing, the greater part being carried off by the rain. The stable dung is, in this respect, in the same condition as guano; indeed, its principal elements are already in a dissolved state, and, therefore, are carried off more easily than those of guano.

A covering for those places in which stable dung is preserved, in order to shelter it from the effects of the rain, has been regarded in Germany as essential for preserving its manuring power. In consequence of the experience, that the soluble elements of stable dung are the most efficacious, it has in some cases, been drawn out with water, and it has been found advantageous to carry *only this fluid* to the fields. I need only refer to the foregoing analyses of the urine of animals in order to see upon *which elements* of it this effect depends.

The reason why, in certain years, the influence of the best and most plentiful manuring is scarcely perceptible, is, that during the moist and rainy springs and summers, the *phosphatse* and *other salts with alkaline bases*, as also the *soluble ammoniacal salts* are entirely or partly removed. A great amount of rain and moisture removes in the greatest quantity, the very substances which are most indispensable to the plants at the time that they begin to form and mature seeds. The system of draining which, of late has been so extensively followed in England, brings the land into the state of a great filter, through which the soluble alkalies are *drawn off*, in consequence of the percolation of rain; and it must, therefore, become more deficient in its *soluble* efficacious elements.

Attentive farmers must have observed that after a certain time the quality of the grain on land laid dry according to this principle, deteriorates; that the produce of grain bears no due proportion to the produce of straw.

What is more evident, sir, after these remarks, than that intelligent farmers must strive to give to the soil the manuring substances in such a state, as to render possible their acting favorably on the plants during the whole time of their growth. Art must find out the means of reducing the solubility of the manuring substances to a certain limit, in a word of bringing them into the same state, in which they exist in a most fertile virgin soil, and in which they can be best assimilated by the plants.

The whole attention of chemists should be directed to the attainment of this end. I am myself occupied with a series of experiments which lead me to hope that this problem can and will be solved. If it succeed, as I have no doubt it will, in combining the efficacious elements of manure in such a way as that they will not be washed away—their efficacy will be doubled; if in this manner the injurious consequences of the present system of draining be removed, agriculture will be based upon as certain principles as well aranged manufactories. Manufactories of manure will be established, in which the farmer can obtain the most efficacious manure for all varieties of soils and plants. *Then* no artificial manure will be sold, whose exact amount of efficacious elements is not known, and this amount will be the scale for determining its value. In the application of such rationally compounded manures, the good will of the farmers must help bring them to perfection. If, then, by the united efforts of the manufacturer and the farmer the best proportions are ascertained, a new era will arrive in practical farming. Instead of the uncertainty of mere empiricism, all the operations of agriculture will be carried on with certainty, and instead of waiting the results of our labors with anxiety and doubt, our minds will be filled with patience and confidence.

I am, sir, your obedient servant,

Giessen, 1845. DR. JUSTUS LIEBIG.

FROSTS.—Prof. Kirtland. speaking of the softening influence of bodies of water on frosty air, and particularly of Lake Erie, and of the Ohio river, says, "For several years in succession, I have found from observation, that the Dahlias were killed in the same night at Cleveland, and at Cincinnati, though they had been destroyed a month earlier in most of the counties intervening.

SALT FOR PLUM TREES.—Several persons speak of the efficacy of salt in causing fruitfulness in the plum tree, by repelling or destroying the curculio, as the result of actual experiment.

Domestic Correspondence.

NOTES OF TRAVEL IN THE SOUTHWEST—No. IV.

BY SOLON ROBINSON.

Mississippi—Visit to Mr. North, Ed. S. W. Farmer—and Mr. Gibson.

"There is no rest for the wicked"—and so, as Dr. P. and myself both belong to that family, we are off upon the morning after you and I, my dear reader, last parted company, and our first object is to visit friend NORTH, of the South Western Farmer, at Raymond. We found him in his office sticking type, for to that was he bred. Would you know what manner of man is this southern editor? He is perhaps forty years old—six feet high—slim built—has a very intellectual face and keen eye—and withal, has the organ of benevolence so large that he would gladly see all mankind as happy as himself. To say that he was pleased to see me, conveys but a faint idea of the real enjoyment that my visit afforded him, as I fully believe. Mr. North feels the greatest anxiety to improve the agriculture of the south, and as a natural consequence to elevate the moral condition of the cultivators of the soil. 'Tis for this holy purpose that he has labored several years in publishing the South Western Farmer with a list of subscribers amounting *almost to* 400, and this the only paper devoted to agriculture in the state of Mississippi, or for the states of Louisiana, Arkansas, and Alabama. It seems a hopeless task to attempt to enlighten such a population; but Mr. North is full of hope, and intends as soon as the present volume is closed, to enlarge and improve the next, and being assisted by the able and ever ready pen of Dr. Phillips, hopes and believes that the farmers of the south will come up to his aid and sustain the paper. I hope so, but I must own that my hope is not strong.

Raymond is the county seat of Hinds, 16 miles west of Jackson, the seat of government, which is in the same county. It has a court-house and very expensively built jail, and several very humble looking churches. The town does not wear a very flourishing look, and the surrounding land, to my eye, looks decidedly poor; the soil, sandy and white clay, and timber, pine and oak. The surface of this county is, in comparison with the others I have visited, pretty level. It has, upon Chittaloosa on the west, and Pearl river on the east, some very rich bottom land, but subject to inundation, and is yet covered with timber.

After spending two days of most pleasant sociability, the Doctor and I started for Natchez, about one hundred miles southwest. The day previous had been for a great rarity a very rainy one, and during this day we had some very fine sprinkles; so that I began to discover that if they don't have any of our frozen weather, they are not far behind in the mud line.

After leaving Raymond, the land becomes quite hilly in the course of the day, and a great portion of it still bearing its native growth of pine, oak, and some hickory, and upon the creeks, a good deal of sweet gum—the only value of which is, and that ought to be universally known, that a strong tea made of the bark will cure any kind of bowel complaint. The splendid "magnolia grandiflora," in places here is so abundant that it gives the woods a cheerful aspect with its beautiful evergreen leaves. The evergreen holly too, is abundant.

This is the 2d day of March. The oat fields are looking green, and corn begins to show its rows. As is the fashion, we stopped at night with a planter in Claiborne county, by the name of Gadi Gibson. It was dark and showery, and as is also fashionable, we found the number of visitors "just what might be expected in Mississippi," and thereupon we proposed to withdraw, and not add what seems to us at the north would be a burden. But we were too late. We had told who we were, and we were known by name, and to such a Mississippian's house is never full, and Mr. Gibson is a true one, born upon the soil, now near fifty years old, and as stout and robust as one of the Green Mountain boys of Vermont. Mrs. Gibson is also one of the finest specimens of a healthy woman that I ever saw. To them at least the climate is salubrious. By the bye, I saw at Raymond, a hale and hearty old man of 72, who was born in what is now Mississippi, though then under a foreign government. This man told me he had lived upon the same soil under three governments, English, Spanish, and American. I have no doubt but what it is more the fault of the people than the climate that they suffer with sickness.

Mr. Gibson lives upon a very good plantation, and has, the Lord knows, how many negroes around him, but, as is the fashion, lives in a log cabin, and what appeared a little unfashionable, the owner *takes the papers*. But, as is also the fashion, our lodging room was in "a separate establishment," across the yard from the main centre of the small village that it takes to make up a dwelling place "in these diggings." Another fashion we find here, as is often found hereabouts, and that is the capacity of a Mississippi stable, which is known as "*the lot*," and is surrounded with a fence sixteen rails high, with a gate of corresponding height, into which said lot are turned all manner of horse flesh, to eat corn out of a capacious trough in the centre, and do their own fighting on their own hook for a position. Corn is the only grain, and corn blades, called "fodder," the only other kind of feed ever given, for which the same trough answers.

Now this is certainly a very primitive kind of stable, and possesses this advantage that it can be enlarged very easily to accommodate the increase of stock. It is also said to be healthy on account of its airyness.

Mr. Gibson keeps his sweet potatoes different from most others. He has a cave cellar, the door being made open work to serve as a ventilator, in which they keep well. The common way is to put them up in "pumps"—a term that I am sure will be as difficult for my northern readers to understand as is the word "chores" here. But the one means a pile of potatoes covered over with dirt, having a hollow log or box bored full of holes, set upon the ground and running out at the top through the centre of the pile, to give ventilation; for without it, sweet potatoes will not keep. At the north, I believe a good way to keep them would be to put them in small parcels with Irish potatoes in a cellar not too warm, but very dry. Or if you can contrive to keep sweet potatoes always dry and warm, they will always keep. The same thing of dahlia roots.

For the accommodation of my southern readers, let me explain that the word *chores* means all the little jobs of work about the house, necessary to be done of a night and morning. Dr. Phillips is so well pleased with its expressiveness, that he has adopted it in his family.

Being naturally an admirer of beauty under whatever form it shows itself, I was attracted to notice a very beautiful lace cap of Mrs. Gibson's, upon which she showed me several others "as fine as silk," and all the work of her own hands—beautiful domestic manufactures.

March 3d—being a little showery, afforded our host an excellent excuse for detaining us another day, and he would have done the same the next—for this is southern fashion, among those who take the newspapers—this being a better criterion to mark civilization "than the use of soap."

Negroes upon large plantations are always under the charge of an overseer. Their wages vary from $250 to $800 a year. A common negro man when hired out, gets from $10 to $15 a month. A woman cook or good house servant, the same. A negro carpenter or blacksmith, from $25 to $45 a month. Corn is now worth from 60 cts. to $1 a bushel, in the interior of the state. Cow peas $1 to $1.50. Sweet potatoes, 50 cts. Irish do., 50 cts. to 75 cts. Oats, 50 cts. Millet, $1. to $1.50. Cotton seed for planting, 50 cts. to $5 a bushel. While at the same time cotton is not worth on the plantations over an average price of 4 cts. a pound.

While off the go ahead track, I will make a memorandum of the weather here in Mississippi since last noticed—this is for comparison with any other place you please.

Feb. 19. Warm, sunny, dry—roads fine, streams low.

Feb. 20. Cloudy—little rain in morning—then clear and cool.
" 21. Mild—somewhat cloudy, and rain at night.
" 22. Cloudy and some rain—mild.
" 23. Mild—flying clouds.
" 24, 25. Sunny and warm—"coats off."
" 26. Quite warm and dry—roads dusty—"jackets off."
" 27, 28.—Clear and mild—fire needed morning and evening.
March 1, 2, 3, I have noticed.

March 4th, which many an office seeker at Washington will be able to remember, and compare with what is past, present, and future, as he hopes it will be—if not warm, at least mild, certainly not stormy—certainly was stormy in Mississippi, in the morning, after which we started again southward over a hilly region composed of argillaceous alluvium, badly cultivated and full of gullies—the streams broad, and gravelly bottoms, deep sunk between high sandy banks that are rapidly working away to help extend our territory farther and farther into the gulf of Mexico. Passed through the town of Port Gibson, which is the best town I have seen in the state. It is situated on a stream called Bayou Peire, a few miles from the Mississippi, from which steamers come in high water to carry out the cotton from the surrounding rich country. Many of the owners of neighboring plantations have their residences here, which give the place an air of wealth and grandeur.

We passed to-day a few miles north of this town, the "old Indian boundary," where the traveller from New-Orleans entered the wilderness that extended almost to Nashville, Tennessee. This was less than forty years ago. Port Gibson is now about 40 years old, and we stopped all night near Cole's creek, with a man who has lived 40 years upon the same spot—long enough to have learned to live better, and have more of the comforts and conveniences of life around him—*but he did'nt take the papers*—and so there is neither fruit, nor flowers, nor shrubbery, nor garden nor good cultivation, nor has the land upon this "first choice in the country," improved under the constant wearing that it has been subjected to. Happily for the owner, his plantation is nearly level, or after forty years subjection to his constant control, he would now be at work upon the second soil, the top one would have departed. This man is not much in favor of improvement. His place used to be a noted "stand" upon the "trail" from Natchez to Nashville, before the *improvement* in steamboats turned the tide, and stopped the influx of cash into his pocket.

After leaving his house we passed a remarkable stream called "Cole's creek," which we were unable to cross the evening before. When the country was first settled, as our late host told us, "he had often fallen a tree from bank to bank," which are now an hundred rods apart and continually widening, as the soil is so loose that as soon as the roots decay there is nothing to hold it together. And the bed of the stream is so full of quicksands, that crossing after a freshet is both difficult and dangerous, and life and property have both been lost in the attempt. If you ask why don't they bridge it, I beg you to read in your bible that "a certain man built his foundation upon the sands, and the floods came," &c., and so would they come here, and neither bridge or mill dam would stand any more chance to stand, than a cotton planter stands to grow rich at the present price of the staple.

In the course of the morning, we passed several other branches of this stream of the same character and began to find the country more hilly, the soil of alluvium, and having the same kind of beds of marly loam as noticed in Warren county, and nearly the whole of great fertility and extreme bad cultivation; full of awful gullies, and showing thousands of acres in sight of the road so past the power of a negro to raise cotton upon it, that it is thrown out to the common as utterly worthless. And yet much of this waste land is covered with Bermuda grass, of which I shall speak hereafter—and that in a southern clime affords the finest pasture in the world, and would sustain great numbers of sheep. Cotton—cotton—cotton—till the land is cottoned to death, because cotton is the "great staple," which in the opinion of a cotton planter, only needs to be sustained, and that will sustain all the links of the great chain of commerce—forgetting that the support of that staple, into which it was driven pretty hard a few years ago, was nothing but a "quick sand Bank," and the floods came and the staple drew out, and down went the chain, dragging prosperity and improvement with it. And these cogitations bring us to a gang of 160 negroes working the road, "because it is so wet they can't work on the plantation." And what will such a host do? Not half as much good, though perhaps more labor, as one-tenth the number of yankees with a yankee team, plow and scraper would do.

Some curious features are seen upon this road—upon some of the hills it is worn down in a ditch like a deep cut in a railroad, 20 or 30 feet deep; while the apex is left so sharp that the forward wheels begin to descend before the hind ones have done ascending.

SMOKY CHIMNEYS.

"Does smoking offend you?" said the landlord to his newly arrived boarder. "Not at all, sir." "I'm very glad to hear it, as you will find your chimney fire is constantly given to the practice." Most, however, have little fancy for smoke even if largely diluted with air; those who spend half an hour every morning with watery eyes over a perverse fire-place, and whose room is filled with smoke at every gust of wind, regard it as a decidedly positive evil.

Hence there have been a thousand and one contrivances to prevent it. Having had my own share of the evils of smoke, and in expedients to get rid of it, I propose to give my experience for the benefit of others. The chimney which gave me the most trouble was one far below the others, rising from a roof much lower than that of the rest of the dwelling. When a strong wind swept over the house and down on the top of the chimney, the flame spouted out of the door of the kitchen cook-stove, and the room was immediately filled to suffocation. I first adopted a cover similar to that recommended in Loudon's Suburban Gardener as infallible, represented in fig. 103, consisting of a cap of sheet iron in the shape of a low pyramid, supported a little above the top of the brick chimney on points at the corners, the smoke passing out just under the eaves of the cover. I found it to answer the purpose whenever the wind swept *down* upon it uninterruptedly, from over the house. But when the wind blew from an opposite course or *towards* the house, and was thus thrown into a confusion of eddies, first upwards, then downwards, this moment to the right and the next to the left, and then apparently all ways at once, it totally failed of answering the desired end; and when I saw in number 9, vol. 10 of *the Cultivator*, Mott's figure of a chimney cap, which would always draw the current upwards, I resolved to try it. I went to the tinker's and had one made as represented in fig. 104, consisting of an upright piece of stove pipe, nine inches in diameter, made square at the lower end to fit the brick chimney, and connected at the upper end with a piece of horizontal stove-pipe, the same size, but considerably enlarged at its two open ends. *The chimney now never smokes an atom.* The tinker charged me about two dollars and a half for his work, which was about one dollar more than he ought to have done; but to come home and find smiling female faces, and a clear air within doors, as is now the case—in the place of eyes filled with smoky grief, and lungs with choking breath, as formerly—any decent man would of course consider himself repaid many times the amount of that little sum. I dont understand the *rationale* of it; but one thing I know, that whenever there is wind, let it be from above or beneath, or from whatever quarter, the current through the chimney is *upwards*. This is the case when there is

Fig. 103

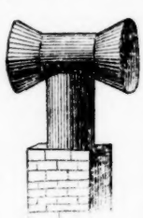


Fig. 104.

no fire at all, if there is only wind. On a still morning, there may be a little smoke in kindling a fire before a current of hot air is formed, but at no other time.

Mott does not say that he has patented this invention; if he is a man of sense he has not; for defending patents is only another name for "vexation of spirit." But if he has patented it, I hope he will allow me to use my cap for this "*recommend*" I have given it. And to those who cannot afford to subscribe for the Cultivator, I can say that this one fact learned from it, is worth many year's subscription. J. T.

SELECT AMERICAN GRAPES

In the Brinkleyville (N. C.) Vineyards.

Our successful experiment of grape culture and wine making, is mainly attributable to the system being *American* throughout. And, as to kinds of grapes, not only, after trial, rejecting foreign, but also such natives as are not profitable in most respects. On canopies supported by posts ten feet each way apart, and all clear beneath, for passage of wind, persons, or teams, might be seen, a month since, a complete spread or sheet of grapes, so thick in many places, as to yield at rates of a thousand and more gallons of wine per acre. And now, after having made our barrel of wine a day for some weeks past, and entertaining visitors, sometimes more than twenty a day, the vineyards are very full still, and a stranger might conclude that few grapes had been abstracted, and that only from some vines. But designing a mere list of most select vines, with a passing remark or two, we proceed at once to enumerate—

1st. Such grapes as are good and profitable in every respect, and from most of which, we make not only gallons but barrels of wine annually, of late years.

1. The White Scuppernong, the noble native of our own state. But north of latitude 37½ degrees of no peculiar excellence.

2. Weller's Halifax—a native of this county, but calculated, so far as we have learned, for any part of our country. Out of a large number of vines from the seed of this grape, one we call the Halifax seedling, promises according to best judges, to be inferior to none in every respect. Its culture is yet limited. Fruit like the Catawba, but sweeter.

3. Vine Arbor—so called from its very large leaf, as well as extended growth, and consequent peculiar fitness for arbors.

4. Somerville.

5. North Carolina. This is late in ripening, and its peculiar excellence is for wine, not table use.

6. York Madeira.

7. Fragrant. This delightfully perfumes the air around when ripe.

The above kinds have all large berries, and average the Isabella and Catawba in size, and consequently are not subject to depredations from birds. We have several other fine sorts of like sized grapes. But we proceed to those of intermediate size, (or that say, of buckshot,) in our first class, viz:—

8. Norton's Virginia Seedling, called after the late Dr. Norton, of Richmond, Va. This we find one of the finest in all respects; as for table use, wine making, productiveness, (capable of 2,000 gallons per acre,) and free from rot.

9. Cunningham. This is also a grape from Virginia, most excellent for eating, and with one difficulty only as to wine qualities, viz: on every raceme, some small green grapes are interspersed among the ripe ones. But to obviate this we omit picking out the green berries, and make the wine in the way the late Mr. Herbemont made his best Madeira, or a white wine from his colored grape; that is by putting the grapes unmashed under the press, and after pressing, the ripe grapes only are found mashed by pressing.

10. Woodson—also from Virginia; much later ripening than the Cunningham; and not so good for the table.

11. Lenoir—a grape of a grade smaller berry. Among the first of peculiar excellence in ripening here.

In the fine vineyard of Mr. John Carter, near Richmond, Va., he showed me, some years since, the Clarence of France, imported by him as *identical* with the Lenoir. If Mr. Carter is not mistaken, this is a foreign grape, only not subject to rotting in our country. The juice is very strong, and as the late Mr. Herbemont observes, capable of making a good keeping wine without the addition of either spirits or sugar.

But omitting further enumeration of excellent grapes of intermediate size, we proceed to the second general class, viz:—Of some kinds excellent in many respects, but exceptionable on account of propensity to rot, (at least at the south,) smallness of berry, &c., and therefore no dependence on them for a wine crop; though a few of each are retained in the vineyards as a variety of fruit, and in contrast, and for visitors. Among a considerable number of kinds in class second, the following are here noticed.

1. The Catawba, the favorite grape of Mr. Adlum, Georgetown, D. C., and now I see from Agricultural periodicals, mostly cultivated in the northern and middle states But its proneness to rot on the vines renders it a very uncertain fruit in the south; and the older the vines the worse, so that some, as I learn, in this state and Virginia have given up vineyard culture in despair of profit, whose principal vines were the Catawba; and

2 The Isabella. And no effectual remedy we have found for this tantalizing casualty, but that of cutting down, in the fall season, most of the vines of these sorts, and grafting on their stocks, some of the first general class, as good at least in every respect, and far better as to certainty of a well matured crop. Three years since we procured a kind of Catawba said not to rot. The young vines of what we call Eaton's Catawba, so far, have matured their fruit,

3. Colesvine.

4. Alexander.

5. Constantia or Vevay. This last is that chiefly cultivated by the Swiss settlers in Indiana. But however succeeding with them, when the vines are young, at least it proves here one of the rotting kinds; although it, as well as all just named, produce fine, large fruit when happening to mature.

This second class now continued with grapes of intermediate size, as

6. Herbemont's Madeira. This as seen in the columns of the "American Farmer" was called the Warren, or Warrenden, ere it received the above name from the late excellent Mr. N. Herbemont, of Columbia, S. C., who gave it notoriety. It appears to be of foreign extraction, from the shortness of the vine joints, and especially its proneness to rot. Mr. Herbemont himself calls it a tantalizing grape; because, as he states, just when giving promise of an abundant yield (once he made at rates of more than 2000 gals. per acre from it,) its frequent habit is to begin rotting without any assignable cause of too wet or too dry, or the like.

7. Longworth's Ohio. The distinguished agriculturist, Mr. N. Longworth, near Cincinnati, sent me a few years since, some cuttings of this by mail, in a newspaper, and by grafting I have cultivated it to some extent. But here it is of no peculiar excellence, and I find, prone to rot, though Mr. L. informed me it had proved a most excellent variety in his locality.

We have procured from nearer and more distant parts of our country, a considerable number of other kinds of intermediate sized berry, and exceptionable in some respects; among which I name

8. Baltimore Seedling.

9. Bland's Madeira or Red English.

10. White English.

11. Enfield.

12. Hunterville, &c.

And also several varieties of small berry and small yield, though otherwise fine. Three only of these we add to our list of the 2d class, viz:—13. Wilcox. 14. Guinard's Native. 15. The Elsingburg.

We have under trial a large number of seedlings, and of those procured from every where we could hear of a good native; and may give the result in due time.

SIDNEY WELLER.

Brinkleyville, Halifax county, N. C., Sept. 15, 1845.

INFLUENCE OF THE STOCK IN GRAFTING OR BUDDING.

Mr. Editor—There are few subjects which have occasioned more discussion among Horticulturists, or occasioned more diversity of sentiment, than the one named at the head of this paper. By some, it has been supposed that the quality of the fruit produced on grafts was much influenced by the character of the stock upon which the graft was set, a change attributed to the difference in quality of the juices of the two parts. This opinion was perhaps more common formerly than at present, and was based on the supposition that the juices of the stock taken up by the roots was immediately available in the production and growth of the fruit. Others have concluded that although the stock exercised some influence on the graft, it was only in consequence of the means which it offered for the more free circulation, or retardation of the sap. This opinion is the prevailing one, and is founded on a better knowledge of the physiology of plants, which teaches that whatever elaboration or change the sap undergoes, is performed in the leaves of the plant or tree, and therefore must possess the same qualities of the graft, and not of the stock.

One of the earliest writers, to give a decided opinion on this subject, was Lord Bacon, who says, "that the scion overruleth the graft quite, the stock being passive only." Lindley, one of the ablest of writers on Horticulture, says,—"Those who fancy that the quince communicates some portion of its austerity to the pear, can scarcely have considered the question physiologically, or they would have seen that the whole of the food communicated from the alburnum of the quince to that of the pear, is in nearly the same state as when it entered the roots of the former. Whatever elaboration it undergoes, must necessarily take place in the foliage of the pear; where far from the influence of the quince, secretions natural to the variety go on with no more interruption, than if the quince formed no part of the individual." Miller, in his work on Gardening, says, "crab stocks cause apples to be firmer, to keep longer, and to have a sharper flavor." Mr. Knight, speaking of the change produced in fruit by placing scions on different stocks, says, "the effects produced by grafting are similar to those which occur when the descent of the sap is impeded by a ligature, or by the destruction of a circle of bark;" that is, it dwarfs the tree, and causes a more rapid maturity, when scions are placed on slower growing stocks, as the apple on the crab, the pear on the quince, &c.

It is also evident that grafts do not affect the stock; that is, the scion does not impart any of its distinctive qualities to the part of the tree below the point of insertion. Still the annual layers of wood formed on the stock must have been elaborated in the foliage of the scion, as asserted by Professor Lindley, and should, unless changed in its nature in passing from the scion to the stock, possess the same qualities. That it does not, is certain from the fact, that sprouts forming in the latest layers of wood, always retain the character of the stock instead of the scion that has formed the wood from which they sprung, and that furnished the elaborated juice for their nutrition. It appears clear therefore that during the life of the individual, the point of junction formed by the meeting of the stock and the scion, constitutes a line of demarcation, across which the influence of either cannot pass. In some kinds of trees this impassibility is rendered very perceptible. For instance when the pear is grafted on the apple, the ring formed at the point of insertion, and the more rapid growth of the pear shows that the peculiar qualities of the pear wood are unable to force themselves below the scion, and give to the layers of the stock the same growth which belongs to the scion, and which would result, were not the qualities of the elaborated sap changed at that point.

Some have supposed that the influence of the stock is so great, that trees raised from the seed of grafted or budded fruit, will, in their fruit, resemble the stock, rather than the scion. This notion has been brought to my recollection by the third no. of that beautiful work, the "Orchardist's Companion." In that number, among the other figured fruits, is a fine specimen of the apricot, presented to the proprietor by C. Morris, of Philadelphia, who, in a note accompanying it, remarks as follows:—"The tree which produced the fruit is a graft upon a *plum stock;* my next door neighbor has a tree growing from a stone of my apricot, which produces an ordinary blue plum, ripening late in the season; the trees are very different in appearance, both in leaf and growth; my apricot ripens the earliest of any tree of the kind—say early in July." I find from the Farmer's Cabinet, which has noticed the occurrence, that many seem to consider the production of a plum from the seed of an apricot grafted on a plum stock, as a species of transmutation, akin to that of wheat into chess, a notion which has too long abused the public mind. The truth seems to be that the apricot is rather a plum than a peach, with which it is usually classed, and its tendency to return to its original type appears more manifest when the favorable circumstance of a union with a plum stock is present. This view of the subject will appear the more reasonable, when it is remembered that in England, the peach and nectarine, as well as the apricot, are usually propagated by grafting on plum stocks; but it is believed no one has ever heard of the plum stock having such an influence on the peach or nectarine, as to cause the seeds of these to produce plum trees. The observation of Mr. McIntosh on the culture of these fruits, would seem to be decisive on the subject of change.

It seems probable then, that the stock exercises no other influence on the scion, than what is owing to the *quantity* of sap furnished, and that the kind or *quality* makes no difference whatever; since the formation of wood, flowers, and fruit depend on the juices elaborated in the scion. It is on the principle that the retardation, or lessening the supply of sap, increases the quantity of the fruit, that ringing or the removal of a narrow strip of bark, and twisting a wire around a branch is sometimes resorted to by orchardists and gardeners. It is for a similar reason that grafting apples on crab stocks, pears on the quince, &c., is practiced; the supply of sap is reduced, the tree produced is dwarfed; and the certainty of fruit is proportionably increased. It is certain that scions taken from the same tree, and grafted into trees indicating by their vigor or habits of growth, a difference in the supply of sap, will when they come into bearing, produce fruit materially differing in size, and also in some slight degree in appearance, color, and taste. This is sufficiently accounted for on the principle laid down above; and there appears no necessity for resorting to any other method of the stock's acting on the scion, to explain these variations. It is a subject, however, of some consequence to the horticulturist, and I for one should be pleased to have some of your correspondents who have experience in such matters, give us their opinion in relation to it. Fruitgrower.

ANNUAL FESTIVAL OF THE MASS. HORT. SOCIETY.

Mr. Tucker—Having been a delegate to the Massachusetts Horticultural Society, at their recent exhibition, I will make a few comments thereon, which may not prove uninteresting. The collection of pears exhibited was very numerous, and comprised a large number of the newer varieties, and very many also of the old varieties that succeed well on walls and in sheltered gardens when budded on the quince, but are useless for open orchard culture. Leon le Clerc, of Van Mons, Clion, Columbia, (native,) Flemish Beauty, Beurré Diel, and Duchesse d'Angouiême, were the most attractive for their size and good quality united. The collection of pears from the garden of Col. Wilder, the liberal and distinguished President of the Society, was the most récherché in its assortment. The collection from Mr. Manning was more numerous, but less select. Other collections from B. V. French, Josiah Lovett, J. S. Cabot, Samuel Walker, O. Johnson, Rev. A. B. Muzzy, Jacob Deane, J. M. Ives, and C. Newhall, Esqrs., were highly respectable both in numbers and excellence.

The exhibition of apples was secondary in extent to that of pears, and the assortment of peaches and plums was in no wise extraordinary, being very limited in variety, and deficient in a number of estimable kinds

which mature at that season, but whose culture appears not to have been attended to. The Floral decorations of the Horticultural Hall were on a very enlarged scale, and extremely magnificent. The premiums for these ran as high as $30, but it must have cost twice that sum to construct either the "Chinese Temple," the "Floral Temple," or the "Gothic Pyramid," which were exhibited on that occasion. On the third day of the exhibition, (Sept. 19th,) the Society and its guests assembled in Faneuil Hall at one of the most imposing feasts, and perhaps the most so, of any our country has ever witnessed. The floral decorations of the tables, and those environing the rows of columns, seemed to impart an air of enchantment to the scene, and there was a hallowed gratification in thus assembling in that old cradle of Liberty, enhanced by the scintillations of intelligence and beauty, emanating from above 500 ladies, most brilliantly attired, who honored that banquet by their presence. Sir, it was a glorious scene; and when the distinguished speakers were called forth one by one, by appropriate complimentary sentiments, it was most gratifying to the soul of an American to hear each one render homage to the consecrated spot on which we were assembled, and to the glorious emblems, the eagle, stars and stripes of our country, which overhung that noble hall. The repast consisted of the choicest fruits of all kinds, with which were richly intermingled, the beauties of sentiment, of rhetoric, and of poesy. Truly this magnificent festival may be justly characterized as the highest "feast of reason and flow of soul." Yours, most respectfully, WM. R. PRINCE.

Prince's Lin. Garden and Nurseries, Flushing, Oct. 25.

INTELLECTUAL IMPROVEMENT AMONG FARMERS.

We have received from "H. T. C." a well written essay, for which the above would be a not inappropriate head. We doubt not our readers would be gratified by a perusal of the paper entire, but the most we are able to do under the press of various other communications, is to present the following extracts:

"The *advantages* of intellectual improvement among farmers, are (some of them at least) as follow:—

1st. The sounder the root, the more vigorous is the tree; the firmer the foundation, the more steady the building; the purer the fountain, the clearer the stream. The improvement of the agricultural mind strengthens this root, consolidates this foundation, purifies this fountain. Hence the whole nation is benefited.

2d. The improvement of taste in the fine arts, developed in landscape gardening, architecture, &c., will beautify the country, draw closer the cords of patriotism around every heart, and exalt and purify the feelings connected with our native land.

3d. It will greatly increase the respect with which the American character is regarded abroad.

4th. It will have a moderating effect on political contentions, when the public mind is less liable to imposition; more determined on having men of integrity and worth to represent it in our national assemblies; and better capable to judge of that worth.

5th. Prejudice, that mighty opponent of all reason, improvement and truth, will be in a great measure abated.

6th. Sound literature will be circulated and read to a greater degree than has yet been attained, instead of the poisoning trash now so widely disseminated.

7th. We shall have a national literature.

I now proceed to show the *perfect possibility* of carrying out this improvement of the agricultural mind; and what I have to say will be applicable to every farmer in the land, and involves the highest and most precious interests of our beloved country.

The soul of all success in any business is METHOD. What would become of the merchant if his day-book and ledger were not kept with the most methodical accuracy? What would befal the banker, the tradesman, or the scholar, if all their operations were not conducted by the same regular processes? And what hint is so powerfully suggested to the farmer as this very method, by her with whom he holds constant communion—dame Nature herself? The seasons, spring and summer, autumn and winter, roll round in an eternally regular succession. The seed germinates, the blade appears, the ear, the blossom, and the grain—each in its turn, succeed the other by the same unvarying method. Animals are brought forth, nourished and matured by the same unchanging law. The rain and sunshine, the frost and the dew, the storm and the calm, are always punctual in their season. Why therefore should the farmer, in the midst of all this regularity, be the only thoughtless, irregular, confused being existent? Why, on the contrary, may not *all* his operations be conducted by a fixed plan from year to year; his farm be laid out in a regular number of fields, in which a regular rotation of crops may follow one another in a regular order; his time and that of his laborers disposed of according to a regular system; his family and household operations conducted by the same regular method from day to day? All this planning may be done with an *immense* saving of time and thought, compared with the usual rambling, shambling way of doing business; and when once it is settled there is no more thought about it. All is as regular as clock-work."

HOGS WILL NOT LIVE ON AIR.

IF it be a fact, as contended by some, that the introduction of the Berkshire breed of hogs has been of no benefit to the country, it cannot be denied but that it has been the means of drawing the attention of farmers to the subject of improvement in that branch of rural economy. Whether this improvement has been effected by crossing or selection, is of no consequence, so long as the improvement progresses.

This improvement is apparent in all sections of the country which I have visited, and more particularly in the immense droves, which pass through this city, (Albany,) from the central and western counties of this state on their way east. In looking over a drove of 300 or 400, you would hardly find one which would appear to have any affinity to the "Land-Pike" or "Alligator" breed, which formerly occupied the places of the full, plump, round-bodied, small boned grunter of the present day. They cannot, to be sure, travel quite as many miles in the day, as the long-legged racer of former years; but what they loose in travel they make up in thrift.

It is a common remark of strangers that although hogs are suffered "by authority," to run at large in the streets of our city, they award us the credit of having very decent looking ones at least; and it is a fact that a mean looking hog is a rare sight hereabouts. Although there are but very few of the pure Berkshire breed to be found in this section, traces of them may be seen in most of those we meet.

It has always been my creed to stick to one breed of animals until I could find a better. That there is a great difference in the amount of food required or consumed by one breed over another, must be admitted by every person who has paid any attention to the subject. Show me a hog with a plump, round body, small head, short nose, small, upright ears, of a quiet, lazy disposition, and I will warrant him an easy keeper.

It is said by some farmers, and I have no doubt but they believe it, "that the superiority of a breed may be found in the feeding trough." But a little attention to this subject, I think will convince them of their error. I have no idea that there is any breed that will live on air; but the manner in which some of my breeding sows lived and improved in flesh last summer, staggered my credulity. After taking the pigs from the sows, rings were put in their noses, and they were turned into a small pasture to feed on grass, with an ear of corn each per day; the drouth soon dried up the grass, but the hogs continued to improve, and did not seem to care much for the corn, which was soon discontinued. They continued to improve, and we almost persuaded ourself that we had found the grand desideratum, long sought for, viz: a breed that would live on air; but lo and behold! what was my astonishment on going into the field not long after, when I discovered the great secret. In the spring and early part of the summer, my

man that comes to the city every Tuesday and Friday, with vegetables for the hotel, and takes the offal of the kitchen, with which I feed my pigs, also took the refuse of the fish market, amounting to one and two barrels each time. This was deposited in the lot where the hogs run, and covered with soil, a layer of fish and a layer of soil alternately, intended for manure. The keen scent of the hogs had led them to the heap, into which they soon made their way, and feasted sumptuously every day, which accounts for their great improvement in condition, and turning up their nose at the corn.

Nov., 1845. C. N. BEMENT.

ON THE CURING OF PROVISIONS

FOR THE BRITISH MARKET

L. TUCKER, Esq.—The curing of meat is a business we are daily engaged in; an art attained by precepts and founded on principles, the knowledge of which is of immense importance not only to the health, but to the comforts and economy of man; yet strange to say, it is a science about which, not one word has ever been written; and that we look in vain through the printed masses of the new and the old world, for a single treatise upon the subject. When you reflect upon this fact, you and your readers will, I trust, be lenient in your criticisms on this, *my* first attempt at a *first* essay on the subject; more particularly when I tell you, I am prompted by no other motive than to increase the value and interest of your invaluable publication; to instruct your readers, and to open the eyes of the many persons engaged in the business to the minutiæ that must be observed, and the difficulties that must be overcome, in order to pursue the trade successfully.

Ude, in his celebrated book on Cookery, in giving instructions how to make Hare soup, significantly says, "first catch the hare." It is not of more importance to catch the hare to make the soup, than it is in putting up beef for the British market, to first get the beef of the right size and quality. The quality is found amongst the the fattest and best fed cattle you can obtain; and the size must range between 600 and 800 lbs., being that which invariably cuts up to the best advantage; having more prime pieces, both in weight and number, compared with the whole weight of the carcass, than any other size we can select. Having obtained the cattle, our next care must be to have them properly killed; and here it is of great importance to your success in curing, that not only the blood of each animal should be well and thoroughly drawn, but that every animal should be allowed sufficient time to rest off its journey, say from 24 to 48 hours, according to circumstances, so as to allow the fever consequent on driving any distance, to subside, before you kill it.

The business of packing is divided into two parts; the first is to cure the meat; the second, is to preserve it when cured. In the packing house, the first preparation that should be made for business, is the making of the brine in which the beef is to be cured. By way of parenthesis, it may as well be here noted, that neither Kanawa, Zanesville, or Goose Creek salt should be allowed to touch your meat, either directly, by mixture with other salt, or indirectly through the medium of brine, for so sure as any of these salts are used, so sure will your meat become slimy like fish, and be imperfectly cured. The best salt I know of, for curing, is the Liverpool coarse sack salt, as it is called. The brine should be made for at least 10 or 14 days before it is required; it should be made in large vats or hogsheads, with a sufficient quantity of finely powdered saltpetre added, to give the beef that red color, which so pleases the eye from long habit; it should be allowed to settle down and refine, and when drawn off into the tubs where the beef is to be cured, it should be clear, and entirely free from any sediment or impurity. The strength should also be tested, which, in the absence of a regular brine tester, may be done accurately enough by placing the half of a hog's head, weighing from 7 to 8 lbs. in the brine, which must float *perpendicularly*, the snout two inches above the surface, before the brine can be pronounced strong enough.

The next operation in the packing house, is the cutcutting up of the beef into 8 lb. pieces, about which it is impossible to give any specific directions, as the number of pieces must entirely depend on the size, weight, and thickness of the animal. This department of the business must be guided by the hand and eye of the practical tradesman, and directed solely by his good judgment. One thing may here be remarked, that it is always well to leave two prime pieces of every carcass, say off the standing ribs, whole and uncut, to weigh from 32 to 38 lbs, and cured in that way, for two reasons; first, when cut up to the proper size after they are cured, it leaves a freshness and bloom on those pieces for the heading, which gives to the purchaser, on opening the tierce for inspection, a certain guarantee that the meat was handled by a tradesman; and secondly, it will facilitate the scaling of the meat much, as should 37 pieces be in the scale, wanting one piece more to weigh 8 or 10 lbs., more or less, that piece can be cut off this larger one to a great nicety, and avoid the delay and trouble of tossing a pile of meat over to hunt up one piece from the many, of the exact weight wanted. In scaling your meat it is not necessary to put more than the exact weight 304 lbs. in, as beef when cured, and put into tierces, will regain fully 5 per cent. of the 10 per cent. it will have lost in the process of curing.

As your beef is cut, the coarse pieces of the fore quarter, such as the clods, stickings, and shoulder pieces, should be selected and well rubbed with dry salt, and put into pickling tubs by themselves; the round, rump, and jump pieces of the hind quarters should in like manner be selected, well rubbed with dry salt, and put into pickling tubs by themselves, and then your prime parts, such as ribs, sirloins, plate and brisket pieces, should be selected, and put into the pickling tubs by themselves, and *without being rubbed*. Those pieces being the most tender, and least veiny parts of the beef, will cure more easily and quicker than the coarser parts, but after remaining a week in the brine they should be drawn, and if the brine has not sufficiently stricken, then and not till then, should those pieces be rubbed with dry salt. The coarser pieces should be drawn and examined every fifth day at least, and if the salt should not have sufficiently stricken, and the impurities be not well extracted, then they should be *gently rubbed* a second time, and the air allowed to act for an hour or two at least, on the meat and salt, before they are returned into the brine; the whole of the meat in the curing tubs must be well covered with brine, and the air entirely excluded from it. Under a good state of the atmosphere, and with proper handling of the meat, it will be cured and ready to put into the tierces in from 14 to 16 days, but of this the practiced eye and hand of the tradesman can alone be the judge, for I know of no words to explain the feel and look of meat when cured, or when not sufficiently cured; practice and comparison alone, aided by close observation, is the only certain way of arriving at that judgment.

The propriety of sorting the meat of the three qualities as pointed out, and having each quality cured separately, I shall endeavor to explain, so as to be understood and appreciated by every person possessed of any common sense and experience. First, the finer or middle pieces of every animal, it is well known, are much more easily cured than the coarser pieces of the extremities of either the fore or hind quarter, hence the propriety of keeping them separate, as nine times out of ten it is wholly unnecessary to do more to them (the finer pieces,) than simply to place them in the brine, where they will cure without any rubbing, while it is necessary to rub the other pieces once at least, and sometimes oftener with dry salt, in order to extract thoroughly those impurities which the *lean* of every animal contains in a very much larger proportion, than the fatter part of the same animal does; and it is for the same reason, right and necessary, to separate the pieces cut off the extremity of the fore quarter from those cut off the extremity of the hind quarter, because the meat of the fore quarter contains more of those impurities, which must be extracted before it is cured, than does the meat of the hind quarter, and consequently the meat of the fore quarters requires more care and handling in order to cure it, than does the meat on

any other part of the carcass of the animal; hence this classification will enable the curer to give to each sort of meat the required handling necessary for its preservation, without interfering with the other parts, which, if treated in the same way, (I now speak of the finer pieces,) would have their natural juices extracted, become hard, and what is commonly but erroneously called over-cured. There is also another reason why this classification should be made; it is this: That it saves much time and labor, when the meat is selecting for the scale, by having each quality in separate bulk; the selector has but to go to either, in order to lay his hand at once upon the particular piece he wants, without losing time or wasting labor in tossing over a pile of meat promiscuously cured.

When your meat is cured, the next process is the packing it away for preservation into the tierces, about which I deem it unnecessary to say anything; because when the meat is selected and scaled, the packing it is a mere mechanical process, in which a man can alone become a proficient by practice and experience. It may be well though to remark, that when your meat is taken out of the curing tubs, it should be washed, and ridded of the impurities extracted by the salt, and generally in a greater or less degree deposited on the surface, and which can be best and most easily done, with the aid of water and a good hickory broom; the packer should always have by him a knife, and whenever he observes an incrustation of those impurities on the meat, which the washing had not taken off, he should use his knife to scrape it off, and if scraping did not effect it, he should cut it off.

When your tierces are packed, they must then be headed and thoroughly driven down in their *wooden hoops*, rolled by, and each tierce have its bung hole bored, and then brined with pure, clean brine, made and tested in the way before described, except that *no saltpetre* should be put in it. It is of the utmost importance that this brine should be made several days before, in order that not only the impurities of the salt, but those of the water also, should have time to settle down into a sediment, and this sediment should not be disturbed when the brine is drawn off. The want of this precaution, has been the cause of much complaint, and injury to the meat when exposed for sale, from the fact that when the brine was put on without first being allowed to clear itself, the impurities of both the salt and the water settled upon the meat, and made it both slimy and dirty. The tierces should remain at least 14 days in this state with the bungs open, and whatever the casks may have absorbed of the brine, should be replenished once, if not twice every day, and this continued until the casks will absorb no more, and that the brine remains as stationary and undiminished, when filled, as though it stood in a glass bottle. The necessity for this precaution is obvious; first, if your staves are not in this way allowed to become saturated with brine, and the brine replenished before the casks are finally coopered and shipped, you can have no guarantee for your casks not leaking on the voyage; and secondly, should this absorption be allowed to take place, on the voyage, your tierces in a short time will become half empty of brine, and wherever your meat then comes in contact with the stave, it will extract from the wood its coloring matter,—will become stained and discolored, and for the want of brine, the meat will become hard and rancid, and perhaps mouldy too. Your tierces after standing at least 14 days will take no more brine. They are then ready for the bungs, which should be put in with a coarse cloth around them, and tightly driven; over each bung a piece of tin should be nailed on, but great care must be observed that the tacks with which it is fastened are so short as not to go through the stave; as, if they do, a leakage will take place that may do much harm.

Then comes the finishing stroke to the whole, namely, the putting on of your iron hoops, and the final coopering of your tierce. As few coopers are in the habit of doing such work in the United States, I shall explain the process, so that all may understand, and perform it, if they will. In the first place, care should be taken to clear your house of all salt and brine, in order that the hoop iron may be kept as free from it as possible, to prevent its rust and corroding. The tierce up-ended, the cooper takes off the three first wooden chime hoops, he then takes his hoop iron and bends it round the place of the *first* hoop, and takes its accurate measure; there he then cuts it to the length, and rivets it, which can only be well done on the face of a small anvil, or on the side of a metal half-hundred weight; he then puts this hoop on, (having eased it, by a few blows on the inside of one edge, to the shape of the cask,) and drives it to the berth of the *second* wooden hoop, leaving room for a wooden guard-hoop on the outer edge of the chime; he then strips that end of the tierce of all the remainder of its wooden hoops, and takes his hoop-iron and measures around the berth of the *third* wooden bulge hoop, cuts, rivets, and shapes it, and then puts it on and drives it down, to the place of the *second* bulge hoop; this done, he then puts on his wooden guard bulge hoop, which passes over the iron one, and drives it to its place, and then drives on the remainder of his wooden hoops, finishing with a guard chime hoop outside the iron one, and so proceeds on until the whole is coopered. It is necessary here to remark, that no iron driver, used perpendicularly, as coopers use their wooden drivers on wooden hoops, will ever drive an iron hoop to its place. There is a proper driver without which the hoops cannot be driven; it is this:

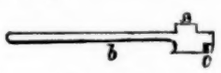


Fig. 106

B, the handle; *a*, the head on which the blow is given, and *c*, the bite which catches the edge of the hoop; this used with a 7 lb. hammer to strike with, will drive any iron hoop to its place, but without it, the hoop cannot be stretched and driven, and consequently must remain imperfect.

The curing and packing of pork differs somewhat from that of beef, but the length to which this article already extends, prevents me from going into that subject at present, nor is it so necessary to be known to the community, for from my knowledge of the trade, of the quality of the Irish pork, and of the manner and cheapness with which it is produced, I deem it impossible for us in the United States to compete in any market with the Irish pork, with the hope of realizing a profit for some years to come under the present tariff; nor can we count with certainty, even under the very best possible management, upon any profit being realized by putting beef up for the British market this year, at the prices now paying for fat cattle in this, the great beef producing country of the United States.

At some future period I may again address you on this subject, which is of such interest and importance to the whole of our community here.

I remain sir, with respect, yours, &c.,

AN APPRENTICED PACKER.

Louisville, Ky, 4th Nov. 1845

CRITICAL NOTICES.

EDITOR OF CULTIVATOR—I do not pretend that the mantle of "Commentator" has fallen upon my shoulders, yet I wish to make one or two remarks after his manner, on matters treated of in the Cultivator.

On page 292 of the current vol., you say. "We think common experience does not agree with Mr. Robey's remarks about the product of small potatoes, and cutting potatoes very small." It agrees most perfectly with mine. I have made many very carefully conducted experiments, by weight and measure, on various soils and at different seasons, and I have invariably found the product of a single eye equal to that from a large potatoe. You will find this result corroborated in one of your back volumes, by the experiments of D. S. Curtis.

There are some remarks on *garget*, in cows, on p. 284. I have never tried any thing to reduce the hardness and swelling of the bag, so certain in its results, as pigs' feet oil, well rubbed in.

D. C, on p. 309, objects to the decisions made by judges, at agricultural fairs, on the comparative merits of

plows, with sole reference to the indications of the dynamometer, without taking into account the goodness of the work. This would indeed be a very erroneous method of judging; but the results of the dynamometer are exceedingly ambiguous on another account; that is, the speed with which the work is performed. The resistance to a solid, moving through a fluid, is proportional to the square of the velocity. Whether the same law holds in relation to the movement of a plow through the furrow, I believe has never been determined; but I know that a plow which marks 350, on the dynamometer, when drawn by a pair of slow cattle, will mark from 400 to 450 when drawn by a pair of smart horses. This fact, which is very seldom taken into account by judges, completely vitiates these experiments and awards.

N. N. D.

Stockport, Nov. 10, 1845.

WANT OF DEFINITENESS IN WRITERS.

L. Tucker, Esq.—Probably you and your readers have often heard of the good old lady's test of the quality of indigo. It being somewhat after this wise:—"Take considerable water—put it into a tolerably sized tub—and into this place a small piece of indigo. If the article was of the proper quality, it would sink—or swim—she had forgotton which."

Without intending disrespect, and, I hope without risking the charge of obtuseness, I must say, of a similar character to the above, is much of the information intended to be conveyed by the thousand receipts and the scores of informants of the present age.

Does the subject relate to matters of domestic economy, we have "a little spice," "a very little salt," "a small lump of butter," "a very little sugar," &c.

Are we to be made wiser in the details of agriculture or horticulture, we are told of "a part of an acre," so and so—"several loads of manure"—"a small quantity of plaster,"—"a few inches in depth,"—"a short distance apart," &c.

This constant use of *indefinite terms*, when communicating what is intended to be *definite information*, is exceedingly annoying to one desirous of instruction, and with the less enlightened, contributes as much as any one thing, to bring "book learning" and "book farming" into disrepute.

When a new or important fact is to be communicated, let it be done distinctly, *definitely*, so as to render it *practically* available.

When a novel or otherwise remarkable experiment is detailed, let the manner be such as will enable another person, in like circumstances, to repeat it in precisely the original manner; or if under different circumstances, to so modify it as to realize, if desirable, the same results.

The above was suggested by a perusal of an experiment with "guano for roses and grape vines," given by your correspondent, A. T., of Brooklyn, in the Nov. no. of the Cultivator.

According to his own account, the result was all that the most extravagant could have desired. I was pleased that his generosity prompted him to make you so *tastefully* sensible of its truth.

But how was it accomplished? Why, in the case of the rose bush, simply by digging "a portion" of a mixture of one part guano with four parts of earth, in about "the roots." What portion of what quantity was thus dug in, or at what season the digging was performed, we are not advised. It might have been "a small portion of a considerable quantity," or the reverse; it might have been rather early in the season—or somewhat farther advanced.

As for the *one* grape vine, we are equally in the dark here too.

I am certainly much obliged to A. T. for his hint, for as it is given, it can hardly be called more than this; but, if he is correct in his impressions I shall be under still greater obligations to him, if he will favor you with the *precise modus et tempus operandi*, in each particular case.

J. B. C.

Providence, R. I., Nov. 6, 1845.

ROOT CLAW.—(Fig. 107.)

Ed. Cultivator—One of your subscribers has made inquiries of you concerning a "root claw." Above is a drawing of one which I have used on my farm, and though simple, I find it quite an efficient instrument. The shank is about twenty inches long, and the teeth twelve. The socket where the handle enters is two inches in diameter. The handle three and one-half feet long, with a pin. The thickest part of the shank is about two inches square. The thickest part of the teeth 1¼ inches. I have used this claw for alders, willows, and bogs, and find it a valuable farming implement. You are at liberty to use this communication as you see fit.

Yours, respectfully, Daniel Gaylord.

N B. The claw is a fine instrument to pull negro heads in the meadow.

Gaylord's Bridge, Ct., Nov. 1, 1845.

KENTUCKY—ITS FARMERS AND THEIR HOMES.

L. Tucker, Esq.—My protracted illness has prevented me fulfilling my promise, and writing to you on this most interesting subject ere this.

In order to prepare the reader for my plain pen and ink sketches, it may be well I should tell you an anecdote of the Duke of Wellington, when premier of England: He requested one of his old peninsular generals to take charge of the war department, and was answered by the veteran, that he felt his incompetency to fill the office, *only* from his inability to speak in public, and answer the questions necessarily put to him in Parliament. The Duke met him by saying, you will get along well, sir, if you follow my rule, which is, to speak in plain good English to the point in question, and avoid all attempts at embellishment by quoting Greek, Latin or poetry. Now, my situation is much the same as that of the old war officer; I feel my incompetency to write of the Kentucky farmers and their homes, *only* from the want of the "pencil" of a Willis to do it with; for no one is more sensible of their great worth, nor appreciates it more highly than I do, but I have to mourn over my inability to write of them, in other than *plain English*, unaided and unembellished by either poetry, Greek or Latin.

The old maxim of "green are the hills that are far away," does not hold good as regards Kentucky. Though much I had heard of its fine lands, its extensive and well managed farms, and their hospitable owners, the description fell far short of the reality, when I came to visit them. The lands are of the very first quality, yielding the heaviest crops of corn and hemp, year after year, without the slightest aid from manure. Where those crops are not growing, you find the *whole* of the remainder of the land well set in blue-grass; every inch of woodland throughout the country being cleared of the undergrowth, and set in this grass. Your eye rests on no land that is not producing either fine blue-grass, or some cultivated crop.

The hospitality of the farmers is hardly surpassed by the proverbially and prodigally hospitable Irish. You are greeted at every door by its gentlemanly owner, saying, "Alight, sir, walk in. Tom, or John, take this gen

tleman's horse and feed him." If you call in the forenoon, there is no getting away till after dinner; if you call in the afternoon, you must certainly stay all night. Nor is this all. If the gentleman should be absent, the lady of the house makes her appearance, and without questioning you on your business, tells you at once, you must come in, be seated, and take some refreshments; that her husband will soon be home, and that you cannot leave until he comes. There is no resisting these appeals, they are made with such unaffected sincerity. You are entertained too as your taste may lead you, either in conversation, reading, (for they all have libraries to some extent,) or with music. In point of comforts, of luxuries, and even elegancies, the Kentucky farmer compares well with the English, Irish, or Scotch gentleman-farmer, *in every respect*. Their houses, generally speaking, have been built within the last 30 years; are of brick; well and tastefully planned; large and roomy; and if fault is to be found at all, they are too magnificently furnished for a "farmer's" residence. They all stand some distance from the road, and are approached by a wide avenue, shaded on either side with large forest trees, and the ground immediately surrounding the dwelling, is invariably tastefully laid out in shrubbery, ever greens, and flowers. Every farmer has his elegant family carriage, and his one horse buggy for himself, with horses and saddles innumerable, for the younger branches to use when their inclination leads them to gallop uncontrolled from one neighbor's house to the other. Were the young ladies of our cities to see the ease, the elegance, and the independence with which the Kentucky farmer's daughter mounts and rides her horse, I am persuaded that many city belles would soon be converted into a farmer's wife or daughter, and I will add, that the change would not only be a happy, but a most useful one.

"John Bull," in inquiring about any place, speaks first of the eating and drinking—though it is last in my catalogue, yet it is not the least in importance, nor the less interesting to your readers to know something about. Let me describe to you a Kentucky farm-house breakfast. Reader, I give you the catalogue just as I found it, nine times out of ten, on every table without any addition whatever:

The tea service of neat but elegant China, not unfrequently silver forks, and invariably a silver goblet laid by the side of every plate. Tea and coffee, the richest cream and butter in abundance, with a large pitcher of rich sweet milk on one side, and a like pitcher of fresh butter-milk on the other, covered with snow white napkins. *Hot* corn bread of two or three different kinds, *hot* biscuits, *hot* light bread, and *hot* cakes of two or three other kinds, made from I know not what or how, but they all taste admirably well; a dish of white maiden honey in the centre, surrounded by fried ham, fried chicken, and a beef-steak or mutton chops, supported in general with a dish of fine Irish potatoes, baked, and flanked by a bowl of fresh eggs, either poached or boiled. This for breakfast! Only think what you might expect for dinner or supper. No wonder, you will say, that the Kentuckians should be such a tall strapping race, when they live in this way; and so say I myself.

Having now spoken in general terms, I will descend to particulars, and endeavour to describe to you some of the finest farms, that are under the best management, in the state, and they are many. In doing so, I shall take them in the rotation that I visited them, and not make selections on account of the *name* or *public character* of the owners, but speak of them *all* as *farmers*, and as I really found them at their homes.

In my next letter I shall make this commencement, and will devote the few remaining lines of this sheet to a short notice of the husbandry of Mr. JOHN DAVIS, which is different to that of any other man in the state, so far as I have seen or been able to learn. He is a native of Switzerland, many years in this country, and was formerly a resident of Indiana, where, not many miles from Jeffersonville, he planted two tolerably extensive vineyards of the Catawba grape, and made a most superior wine, for which he got ready sale at $2 per gallon. Mr. JOHN L. MARTIN, of Jefferson co., induced him to sell out his vineyards in Indiana, and he has him now residing on his princely farm near Louisville, planting and cultivating an extensive vineyard there, of the Catawba grape, of some 20 acres or more, a large portion of which will bear this next year. The arrangement is very complete, and must be successful under such guidance. The vines are planted in rows, at distances of 8 feet and 10 feet apart between the rows; well cultivated and free from grass or weeds; the vines are being trained on a light standing frame, or trellis, and give the whole the appearance of a beautifully cultivated garden. The wine made from this grape, is of a fine, full, rich, and sweet flavor, and possesses a peculiar and invaluable qualification, namely, that it can be kept 4 years at least on tap (for Mr. Davis has tested it that long,) without injuring the wine in fullness of flavor, or risking its becoming sour in the least degree—a quality that I never knew or heard of any of the wines of Europe to possess.

A company has been formed amongst the most wealthy and influential farmers of Bourbon co., to import several Alpaca immediately, into this state. The shares are all taken and *the money paid in;* a man has been chosen, and an agreement made with him to start before Christmas to South America for them, so that within the next year you may count with certainty upon seeing this most interesting and important experiment tested in Kentucky, by Kentucky farmers, to an extent, and in a manner that must insure success, if our climate is at all suited to the constitution of this most valuable animal. Before I write to you again, I hope to see some of the company, and to be able in my next to give you a more detailed and particular account of this important movement.

Wishing you a Kentucty breakfast to feast on during the coming cold winter, I remain truly and respectfully yours, GRAZIER.

Social Hall, near Lexington, Ky., Nov. 1, 1845

SHEEP HUSBANDRY.

L. TUCKER, Esq.—I have noticed many articles in your paper, headed "Heavy Fleeces—Fine Sheep." As I have been a wool-grower for the last thirty years, and have seldom, if ever, in that time, wintered less than 300, it seems not improper for me also, for once, to speak on this subject. I commenced early with half-blood merinos: and in 1822, I selected 20 ewes from a lot of full-blooded merinos in Watertown, Conn. About 1814, our late Chief Justice, R. Skinner, purchased a lot of full-blooded merinos, from his native county, Litchfield, Conn., then called the Humphrey sheep. In 1825, he purchased a Saxony buck. The scab got into his flock, and in his absence to the southern states, by neglect of good care, a large number of his flock of 500 died, and fortunately, some would say, his Saxony buck among the number. On his return, in 1827, I purchased his entire flock of ewes, about 150. I have bred from the full blooded merino since then, and mostly from bucks from Consul Jarvis' flock. I have had three bucks and a few ewes from the Shaker flock, Enfield, N. H.

My manner of improving my flock has been the following: No observing wool-grower can have failed to notice, that as great differences exist among sheep, as to the length, thickness, and fineness of wool, as of the hair of the cow. The first care of a good dairyman is to select his cows best for milk, quantity and quality. Build is a second object. By proper crossing of these selections, our best breeds of cattle are produced. I have had ewes apparently from the same original stock, one at three years old, producing but three pounds of wool, and a miserable lamb; another of the same age, and in the same order, shearing 5¼ lbs., and raising a good lamb. The fleece of the first will be short, thin, and of a rotten deadly appearance. The other, long, thick, and of fine silky, lively appearance. This last I breed from as long as good keeping will enable me to. I have now a ewe 18 years old, with a likely lamb by her side, and another 14 years old, that has raised a lamb this year with as much grain as both would eat, which at seven months old weighed 109 pounds. From a flock of 320, I select annually 100 for breeding, in the spring before shearing, two years old, and upwards. From this selection I

mark 20 or 30 of those which have thick, long, fine wool, free from gum or jar, or any appearance of coarse wool or hair on the flank or tail. The female part of the increase of this selection are preserved; without this attention to marking the best ewes before shearing, the best of the flock will be disposed of after shearing. I give my 100 ewes six quarts of corn per day. My lambs seldom have any grain. The remainder of the flock have no grain. All are housed in the winter, and have access to good water and salt at all times. I have many ewes which from old age shear light fleeces. Yet my whole flock of over 300, yield 4 lbs. 4 ounces per head. I have no 10 to 13 lb. fleeces. My heaviest buck fleece, weighed 8¼ lbs.

There is but little known as to the weight of wool from the weight of the fleece. I tried the experiment once upon two bucks. One weighed over 8 lbs., and the other 6¼ lbs., both in the same order and washed alike. The largest fleece weighed after being cleansed, 3¼ lbs., and the other 4 lbs. I do not believe a fine wooled sheep can be produced in Vermont, that will in one year yield 6 lbs. well cleansed wool. I hope your correspondents will send you the amount of the fleece well cleansed, and the price their wool brings this year. I sold my last year's clip the 8th of last March, and this year's clip last month. The average price of both clips is 39¼ cents. During the last seven years it is as follows: My clip of 1842 and 1843 sold in 1843, at 34, 36, 43, 45, 46, and 70 cents.

If the wool-grower will look back to the prices of those years, he will find the tariff has had but little effect upon the prices. This jumping out and into ship at every session of Congress, is what ruins the wool-grower. He must expect ups and downs in prices; that is the lot of all. I fear not the west. The increase of sheep (fine sheep,) does not keep pace with the increase of population. Fine sheep never can survive the cold rains of the western prairies. Fine wool yields a better profit to the farmer even at this time than any other agricultural business. This is the first time I have spoken. Therefore please excuse my long yarn.

JOHN S. PETTIBONE.

Manchester, Vermont, Oct. 28th, 1845.

IMPORTANCE OF WOOL DEPOTS.

MR. EDITOR—I have been surprised to learn that the plan of a Wool Depot as established at Kinderhook, does not meet the approbation of many of the manufacturers. Why, I can hardly conceive.

Great injustice is done for the want of descrimination between fine and inferior grades. For years the fine wool-grower has struggled on under the delusive hope held out to him by the manufacturer of renumerating prices; but vain has been and will be that hope, unless some system is universally adopted, which shall cause this difference to be made, for the manufacturers frankly admit that they cannot buy from farm to farm and make it, because every man is prone to think his wool about as good as his neighbor's. Admit, for the sake of the argument that the manufacturers are honestly disposed to pay the grower all his wool is fairly worth to them, does the present system do justice? All must admit that it does not. Why? Because the manufacturer does not himself visit the grower to buy, but sends an agent who has no other interest than to buy the wool cheap enough, *upon the average*, to meet his employer's views. Every reader can call to mind numerous instances of reckless agents, buying with an utter want of discrimination, the only apparent rule being "buy as you can," but be sure and make the average low enough.

That the interest of the manufacturer and wool-grower should be identical all admit. How it is to be made so is the question? Of all the plans to accomplish this, that of *depots* seems to me to be the most feasible. Establish in localities where sufficient wool can be readily brought together, and of convenient access to the purchaser. What can be more just or equitable than for the wool-growers of a section to deposite their wool with a faithful and competent agent, to sell at the fair market price? As I understand the plan, a standard of quality is established; each lot is assorted by the fleece agreeable to such standard; the sorts are carefully weighed and entered in a memorandum-book; the lot is then placed by itself ready for the manufacturer, who can select such lots as suit. The value of each can be readily decided upon; the purchaser knows just what he is buying, and the grower gets the relative value of his wool, coarse or fine, be it high or low.

Another great advantage would eventually accrue to both manufacturer and grower. By a proper discrimination and price, the manufacturers could induce the growth of just the style and quality most desirable, while if the present system is continued, eventually nearly all the fine sheep will be superceded by those of middling grades, which pay better.

The wool-growing interest has become one scarcely inferior to any other in the Northern States, but has as yet been managed in a very loose way. Some good system should be adopted to effect equitable sales, and if a better one can be proposed than the one I am urging, I hope it will be, through the columns of the Cultivator.

I would also suggest that the wool-growers hold a convention in Albany during the coming winter, to discuss the subject and agree upon some plan for universal adoption. What say my brother wool-growers? Will you answer through the next Cultivator? Let us keep the "ball rolling" until some plan is devised to accomplish so desirable an object. A WOOL-GROWER.

CORN, APPLES AND POTATOES.

MR. L. TUCKER—Herewith I send you nine varieties of Indian corn—eight of Apples: the Pound Sweeting, two Sour Russets, the Honey Russet, the riches apple I ever tasted; the Bellflower, Spitzenburg, Seek-no-further, and Daniel apple. The two last, from grafts at eight years since. They are all winter apples, except the Daniel, which is scarce, growing only in two orchards to my knowledge. They are a first-rate apple, and stand at the top of the market in Utica.

I send also four varieties of Potatoes—the early and late Pink-eyes—the blue Pink-eye, and a variety of white, which I call "Yorkers." I wish you would try the blue pink-eye, and if you have any better variety, send me half a peck or so. I think my experience with potatoes shows the fallacy of the doctrine that potatoes run out. I have planted the pink-eyes for more than 20 years, and for nine years on the same farm.

Trenton, N. Y. Nov. 1845. DAIRYMAN FARMER.

Our correspondent has our thanks for the articles above enumerated. They are fine specimens, and may be seen at our office. We will test the potatoe, but if we have any better, shall not be able to send them, unless Dairyman Farmer will give us his name.—ED.

TO KILL RATS.

MR. L. TUCKER—A subscriber in your last Cultivator, requests the best manner of destroying rats. The following methods of destroying them, I copy from a very good work, entitled the "Vermin Destroyer," which may be of some service to your inquirer. Although I have abbreviated the description, it does not destroy its efficacy:

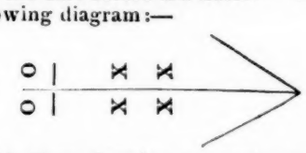
Take an old fashioned wire trap in good order, smear the floor over with the oils of anniseed, carraway, and rhodium. This latter oil is very expensive and of a strong scent, therefore a very little of it should be used. Mix with them for bait, a few drops of the carraway oil, and set the trap for use. The scent of these oils will allure the rats into almost any kind of trap. Or by taking a handful of newly ground malt, mixed with a handfu of good sweet oatmeal, and an ounce of arsenic made up into pills and thrown into their holes, is a very effectual remedy. Care must be taken not place them in the way of poultry. If too much arsenic is used it will not kill them; it will only make them vomit up the poison. Many persons have found that a genuine Scotch *slut* terrier is first rate for giving the above vermin their quietus. The sluts are considered far superior to the dogs for the business. RATOLOGY.

Albany, Nov. 5, 1845.

FACTS AND OPINIONS,

Condensed from various Exchange Papers.

SNOW-PLOW.—The European correspondent of the Boston Courier, gives an account of a machine to remove snow from highways and railroads, used in Dresden, which ingenious yankees will soon have an opportunity of employing and improving upon, if they wish. It literally puts "the cart before the horse." It is represented by the following diagram:—



The outside lines, forming an acute angle, represent the form of the shovel or snow-plow, the long straight line in the middle, is the pole; the oxen are placed at the points X X, and two men at the points O O, to steady it; it is pushed, not drawn, by the harness, ropes, or chains attached to the oxen and fastened to the hinder extremity of the pole, near O O. It will be perceived that a road is made for the team and men, and that they are not annoyed by travelling in the snow drift. Who will make one forthwith and try it this winter? Any force, by way of ox-team, may be attached to it, and the heaviest snow drifts riven asunder.

WHEAT—HEAVY CROP.—S. M. Brown, of Elbridge, Onondaga Co., N. Y., harvested over 400 bushels of fine white flint wheat, from eight acres, the present season. He ascribes a part of his success to a dressing of three bushels of salt per acre. Single experiments, however, are as a matter of course, insufficient to determine points of this nature.

SUCCESSFUL EXPERIMENT WITH GRASS SEEDING.—A New-Jersey correspondent of the New-York Far. and Mechanic, states the following experiment:—He first procured, from different sources, sixty loads of muck, and rotted leaves from the woods; it was exposed to the frosts of winter, and the rain and sun of summer, till after midsummer, when three hogsheads of unslaked lime were mixed with it. When properly heated, it was put on three acres of turf ground, which had been newly turned over, and rolled down. The manure was well harrowed in, rye and grass seed were sown, and the land again well harrowed and rolled. The subsequent product was two tons of hay to the acre, where previously not half a ton was cut. This affords another proof of the great advantage of the thorough intermixture of the manure with the soil. Thorough and repeated harrowing should always be given immediately after spreading manure, even where it is intended to turn it under with the plow.

GRINDING HORSE FOOD.—The London Ag. Gazette states that two horses, every way equal, were allowed each five lbs. of oats daily, and enough hay, amounting to about 17 lbs per day. For one horse the oats were crushed, for the other, not. 100 parts of the dung of each horse were examined chemically on the fourth day; that from the horse fed on crushed oats contained no nutritive matter, but merely woody fibre, mixed with secretions and salts. In that from the other horse, one quarter per cent of nutritive matter, consisting of starch and gluten was found—arising from the inability of the horse to perform perfect mastication, and which must vary with age and rapidity of feeding. No difference was found in the dung from chopped and unchopped hay, though the ease of eating the latter and consequently greater rest obtained, was a decided advantage.

FATTING SWINE.—There is sound sense in the following, taken from an old work, called "Countrie Farm." The more quiet and comfortable hogs are kept, the more rapidly will they take on fat:—"The hogs which you intend to keep in and to fat, shall not come forth at their stye, being alone and free from others, nither shall they have any light but at the door, which is made to go in at, for to dress them. The care about these is not so great as other cattle, excepted only the keeping of them clean, and knowing how to make them good meat, so long as until they are fat, for after that they will lose every day some of their meat, for they are sometimes seen to heap such quantities of fat upon their live flesh, as that there are some hogs found a foot and a half thick of lard."

GOLDEN RUSSET.—The Indiana Farmer and Gardener, speaking of the popularity of the Golden Russet, (described by Downing as the American Golden Russet, and known also by the name of Bullock's Pippin,) says. "A gentlemen near Belfre, Ohio, being applied to for a list of apples to furnish an orchard of a thousand trees for marketing purposes, replied, "take 999 Golden Russets, and the rest you can choose to suit yourself." [For an account of this apple see Downing's work on Fruit.]

PRESERVING CUT FLOWERS.—By changing the water once a day, and putting in a few grains of nitrate of soda, at each change, the beauty and brilliancy of cut flowers may be preserved a long time. Nitrate of potash (nitre or saltpetre) is nearly as good as nitrate of soda. A very weak solution of carbonate of ammonia would doubtless have a fine effect.

DRAINING.—A very thorough and successful experiment is described by E. Stabler, in the Rockville (Md.) Reporter. A piece of ground was completely worn out when purchased; a part was like mortar in spring, and baked like brick in summer. An unsuccessful attempt was made at draining. "Meeting" says he, "an able essay on draining in the Cultivator or Farmer's Cabinet, I concluded to make another effort. A heavy coating of lime was put on, but the crop of corn was not over 15 bushels per acre. From 500 to 600 yards of surface and underdrains were then made, and oats sown. "The increased crops of oats nearly paid for both the lime and the drains. Four years since, in the then state of the land, it would not have produced more than five bushels of wheat to the acre; now it is light and mellow, and will most likely produce an increase in grass of four or five to one. It is not a very difficult problem to solve, whether there has been a loss or gain in the transaction; when a single dollar for a year's subscription to an agricultural journal, should suggest the idea for improvement, by which land that did not formerly produce over five or ten bushels, will now yield thirty or forty bushels to the acre."

PRODUCE FROM A SINGLE ACRE.—Henry Colman, in his his account of the market gardens about London, gives the following as the amount actually produced in one year from a single acre by a market gardener, the success being mainly attributed to trenching, heavy manuring, and rotation, besides the usual course of good cultivation:—

Radishes,	£10
Cauliflower,	60
Cabbages,	30
Celery, 1st crop,	50
" 2d "	40
Endive,	30
	£220—$1,100

PICKLING EGGS—AS DONE IN HAMPSHIRE, ENGLAND.—When the eggs are plenty, take from four to six dozen, newly laid, and boil them hard. Then remove the shells, and placing them in a large mouthed earthen jar, pour upon them scalded vinegar, well seasoned with whole pepper, alspice, ginger, and a few cloves of garlic. When cold, the jars are closed, and in a month or more afterwards the pickles are fit for use.

WORKING OXEN.—At the late Northampton (Mass.) Cattle Show there were three trains of Oxen entered for the premiums. The train from Hadley was the largest, and comprised fifty pairs. The train from Goshen numbered 22 pairs; that from Southampton numbered 20 pairs. There were ten other yoke of fine oxen from different towns. These in all make 102 pairs, or 204 oxen.

CONSUMPTION OF GUANO IN GREAT BRITAIN.—

In 1841,	500 tons.
" 1842	2,000 "
" 1843,	5,000 "
" 1844,	26,000 "

and from 1st July, 1844 to 1st July, 1845, the enormous amount of 257,000 tons

THE CULTIVATOR.

ALBANY, DECEMBER, 1845.

CLOSE OF THE VOLUME.

With this number of "The Cultivator," we arrive at the termination of another year's labors. With the manner in which the duty on our part has been executed, we must leave our readers to judge; but if untiring exertions and ceaseless labor are attended with success, then we have certainly not labored in vain. It is with great satisfaction that we refer to the able assistance we have received in the shape of correspondence. More than three hundred persons have lent us their aid, nearly all of them highly intelligent practical farmers, and many of them well known for their agricultural and scientific experience. That the combination of ability which has been brought to bear in carrying on our paper, has been appreciated, we have the most gratifying testimony in the hearty expressions of approbation we are constantly receiving from every section of the country, and in the liberal and unprecedented circulation of our paper. To those correspondents, who have thus contributed so much to its substantial value; and to Agents, Editors, and others, who have essentially assisted us in placing it before the farming community, we are under strong obligations, and tender them our cordial thanks; and we invite earnestly their co-operation for the future.

By unremitting exertion, and the prospect of extensive and continued assistance for the future, we hope to render the paper at least equal in every respect to the past, and confidently expect the high character it has hitherto enjoyed will be fully sustained. In these labors the editor will be assisted as during the last year, by SANFORD HOWARD and J. J. THOMAS; and it is believed that with our extensive means for agricultural intelligence, we shall be able to embody in our next volume, an amount of information which will be every way acceptable to our readers.

☞ The subscribers to "The Cultivator," should remember that all subscriptions are discontinued at the end of each year; and consequently that this will be the last paper they will receive until their subscriptions are renewed.

TO CORRESPONDENTS.

COMMUNICATIONS have been received since our last, from Truth, Dairyman Farmer, Wm. R. Prince, A Subscriber, T. & J. Hardy, J. S. Pettibone, C. Smith, C. N. Bement, Daniel Gaylord, An Apprenticed Packer, Ratology, J. B. C., Grazier, Highlander, N. N. D., A Subscriber, A Farmer of Tompkins, A Young Planter, J. D. F., W. Bacon, A Wool-Grower, J. Townsend, Wm. Mackinder, Farmer C., L. Durand, R. H. Ostrander, Samuel Bradhurst, Geo. Geddes, S. S. G., E. V. W. Dox, Noyes Darling, Farmer, J. W. S., Philip Short, J. R. Fuller, D. G. Mitchell.

We are indebted to A. J. Downing & Co., Newburgh, —J. L. L. F. Warren, Boston—Elwanger & Barry, Rochester—W. R. Prince & Co., Flushing, and Thomas Hancock, Burlington, N. J., for new Catalogues of their Nurseries—To J. L. Roche, Wilmington, for Transactions of the New-Castle Ag. Society—to A. D. Phelps, Boston, for Mr. Teschemacker's Essay on Guano—to Dr. Thompson, for David Thomas' Address to the Aurora Hort. Society—to the American Institute, for copies of several Addresses and reports, made during their late exhibition.

☞ We tender our thanks to numerous friends who have forwarded us papers containing accounts of Agricultural Exhibitions, Addresses, &c. Though we may not be able to make immediate use of them, we are always glad to receive them, as we frequently heve occasion to refer to them.

☞ We are indebted to WM. MAKINSTER, Esq., for a copy of the doings of the Middlesex county (Conn.) Ag. Society, and the reports in reference to the last exhibition of that society. They show that spirited efforts are making in that county for the improvement of the various departments of agriculture and horticulture. We are obliged, for want of room to restrict our notice to this small space.

SOUTH DOWN MUTTON.—We acknowledge the receipt of a fine carcass of South Down Mutton from JAMES LENOX, Esq., of New-York. It was bred and fattened at Mr. Lenox's farm, NETHERWOOD, Dutchess county. We have, together with some of our friends, tested the quality of this mutton, which is unhesitatingly pronounced of very superior flavor—fully sustaining in this respect the high reputation which the South Down bears among epicures.

WOOL-GROWING.—We invite the attention of those engaged in this business, to the communication of "A Wool-Grower," published in this paper. The subject discussed, is one of great importance, and should receive the careful attention of those especially who are engaged in the production of the better grades of wool, whether for fineness or superior combing qualities.

AGENTS FOR THE CULTIVATOR.

WE publish this month, a list of Agents for the Cultivator, on a sheet with the Index and Title-page. It is hardly possible to avoid more or less errors in such a list. Some names may be omitted, and others may be inserted which ought to be omitted. We hope, however, that no one disposed to aid in the circulation of our paper, will fail to act as Agent because he does not find his name in the list.

An edition of the Cultivator is published in colored covers and stitched, for those who do not receive their papers through the post-office. This edition is not sent by mail on account of the extra postage the stitching and covering would occasion. It is sent by Express to the following Agents, and we would recommend to all our subscribers living in the vicinity of the places named below, to renew their subscriptions with these Agents.

Auburn—J. C. Derby & Co., Booksellers.
Boston, Mass.—A. D. Phelps, 124 Wash.-st.
Dr. E. Wight, Druggist, 7 Custom H. st.
Buffalo, N. Y.—T. S. Hawks, News-office.
Geneva, N. Y.—G. H. Derby & Co., Booksellers.
Lynn, Mass.—Samuel Farrington.
New-York City—M. H. Newman, 199 Broadway.
New-Haven, Ct.—G. N. Seagrave, Seedsman.
Northampton, Mass.—Harvey Kirkland.
Owego, N. Y.—G. J. Pumpelly.
Philadelphia, Pa.—G. B. Zieber & Co., Booksellers.
Providence, R. I. —A. H. Stilwell, Bookseller.
Portsmouth, N. H.—N. March, Bookseller.
Rome, N. Y.—A. L. Johnson.
Rochester, N. Y.—D M. Dewey, News office.
Springfield, Mass.—D. C. Brewer.
W. D. Brown.
Schenectady, N. Y.—W. E. Russell.
Syracuse, N. Y.—Stoddard & Babcock, Booksellers.
L. W. Hall, Bookseller.
Salem, N. Y.—W. B. Harkness.
Troy, N. Y.—S. Willard, News office.
B. H. Boynton.
Wilmington, Del.—Jas. L. Roche, Post-office.
Worcester Mass.—Ruggles, Nourse & Mason

"TRANSACTIONS OF THE STATE AG. SOCIETY."

The Editor of the Cultivator trusts that his readers will excuse him for the space he finds it necessary to occupy with matters which may, by some, be deemed of a personal character. In the present instance, however, justice to the State Ag. Society, as well as to himself, requires that he should brand with the infamy it deserves, an article in the last no. of the American Agriculturist. This article occupies a page and a half of that paper, and is filled with statements which, so far as they are derogatory to the State Society or to himself, are without the least shadow of foundation in fact; and while the editor denies the whole of these statements in gross, he will give a specific contradiction to such as he deems most pernicious in their tendency.

1. After detailing a "varied combination of men and circumstances, pointing all to the Cultivator," this libeller proceeds to charge the basest corruption on the part of the editor of this paper, in the words following:

"I am aware that the Editor of the Cultivator received no salary of the State Society as Recording Secretary. If he has received no compensation *indirectly*, his labors have been *highly disinterested!* He asserts that "all his labors in behalf of the Society for three years were bestowed without fee or reward." He himself here makes a new issue Let me ask if he did not receive $1,000, or a sum nearly equivalent to this, for *merely reading* the proof sheets of the Transactions of the Society for last year? If he did not, it is strange, for he himself is the authority for it. When urging that the Transactions should be sent to the Senate he remarked to a fellow-Executive-Committee-man, who desired the report to go to the House, that its being sent to the Senate would benefit him (the Editor of the Cultivator) a thousand dollars. Was not that $1,000 received from Mr. Van Benthuysen for reading proofs? If so, were not his official position and the patronage of the Society used to assist the Cultivator or its editor?"

The charge here is, taken in connection with the preceding part of the article, that the editor of this paper received from Mr. Van Benthuysen, the sum of one thousand dollars for his influence in causing the Transactions to be sent to the Senate printer. Now that he may not be accused of any evasion, the Editor of the Cultivator assures the public that he never received from Mr. Van Benthuysen, or any other person or persons, the sum of $1000, nor any other sum whatever, for reading proof sheets, or for any service or assistance whatever connected with the Transactions or any other business of the State Ag. Society.

To add to the atrocity of this libel, it will be seen that the writer says that "he himself [the editor of the Cultivator] is the authority for it," and further that "he remarked to a fellow-Executive-Committee-man, that its [the Report of the State Society] being sent to the Senate would benefit him (the editor of the Cultivator) a thousand dollars." That any other person than the writer of this article, ever made these assertions, the editor of the Cultivator does not believe; but by whomsoever made, he pronounces both assertions entirely destitute of truth. He never said that he had received, or was to receive, or that it would be in any way one copper's pecuniary benefit to him to have the Report sent to the Senate instead of the House. What he said, (and this he said not to a single committee-man, but to all the Committee while in session,) was, that it would be a personal convenience to him, as he had to read the proof-sheets and superintend the printing, to have it sent to the Senate inasmuch as the Senate printing was executed at the same office where his paper was printed.

2. The writer in the Agriculturist next asserts as follows:

"Again: his friends have asserted that the position of Recording Secretary alone brought 1500 subscribers to the Cultivator If his friends knew this, he was undoubtedly the source of their knowledge. Then his service is indeed *disinterested!* Better that there should be a "*fee and reward*," for then there might not be a perversion of official patronage to pay for labor that apparently was done of mere good will. The evidence that his friends (in interest, if nothing else) have urged that he should be Secretary to benefit the Cultivator is *not verbal*, and is in possession, and can be produced at once if it be necessary."

That the position of Rec. Sec'y to the Society brought 1500, or any other number of subscribers to the Cultivator, the editor of the Cultivator never believed. On the contrary, he always supposed that, by drawing so large a portion of his time and attention from his own business, it was an injury to the circulation of his paper; and he confidently believes that had he devoted the time and energy which he gave to the Society, to his paper, its circulation would have been much larger than it was. Of the sincerity of this conviction, sufficient proof may be found in the fact that feeling sensible that he could not longer afford to hold the "position of Rec. Sec'y," he positively declined a re-election in 1844. He was however re-elected, and most strenuously urged to accept it; but, feeling that the Society did not need his services so much as his own business did, he felt himself compelled, despite the urgent solicitation of gentlemen from every section of the State represented at the annual meeting, to decline the appointment. If, as the writer pretends, he has any evidence that the appointment of the editor of the Cultivator, has been urged "to benefit the Cultivator," he is invited to make it public. If such arguments have been used, it was unbeknown to him. So far as he knows, no such arguments have been urged or were needed, the appointment having been made with entire unanimity, and entirely unsolicited and undesired by him.

It is well known that the editor of the Cultivator did not desire the appointment, which was again conferred on him at the last annual meeting of the Society. He consented to it, with much reluctance; and only on the consideration that he should, this year, receive such pay for his services as should be deemed reasonable, and his salary was accordingly fixed at $300. He felt that he could not afford, and that there was no occasion for his doing the labor, as heretofore, for nothing. He has already stated to several of his friends that he could not accept the appointment another year on account of the addition it made to his labors, which are already sufficiently onerous; but circumstances may now render it acceptable to him, as he would not wish to retire from it, until the facts in relation to these charges, are fully made known.

3. A third charge which this defamer brings against the Editor of the Cultivator, is in these words:—

"A curious part of this whole system of no 'fee or reward.' was witnessed at Albany last winter. A bill was introduced into the House, directing every County Superintendant of Common Schools in the State, to subscribe for as many copies of the Cultivator as there were school districts in their counties. The subscription and postage to be paid by the State out of the school funds. And how was all this to be effected? By these very relations; by the exercise of that influence which springs from the possession of executive patronage. The committee of the House, to which the bill was referred, reported it back and advocated its passage; and every man who stood in a position to the Cultivator of either interest or *indefinite friendly relations*, was found urging it in the lobby or the House. However, the good sense of the House killed the bill. This, if it had passed, would have given 12,000 additional subscribers to the Cultivator, with the pay certain, and subject to no commission. This was a '*fee and reward*' worth working for, and evinced a most decided *disinterestedness!*"

In reply to this heinous offence, the editor has only to say, that the bill alluded to, for supplying each school district with a copy of the Cultivator, was introduced into the Legislature by Mr. Danforth, of Jefferson county, a gentleman with whom he had never spoken, or had any communication either directly or indirectly, and the first intimation he had of the bill was derived from the report of the legislative proceedings in the newspapers. He then called on Mr. Danforth, who expressed a strong desire to have the bill passed, declaring his belief that its provisions would confer more benefit on the School Districts, than an equal sum appropriated in any other way. After thanking Mr. D. for the very flattering estimate he placed on the Cultivator, the editor expressed to him his conviction that it would be impolitic to urge the passage of the bill, as it would at least look like favoritism to one of the three agricultural papers of the state, and might excite their hostility; and that, so far as he was concerned, he preferred the matter should be dropped. This opinion he expressed to every one with whom he spoke upon the subject; and if any one, either in the Legislature or out of it, urged its passage, it was done without his solicitation or knowledge. For the evidence afforded of the high estimation placed on the Cultivator, by the introduction of this bill, and its passage being advocated by a committee of the legislature, if such was the fact, the editor is truly grateful; but he knows no rule of ethics by whicl

he can be justly censured for the approbation which the public are pleased to bestow upon his labors.

It would seem that the writer in the Agriculturist intends to have *something* wrong understood by the repetition and italicising of the phrase "*indefinite friendly relations*," but what that something is, or what is intended by the use of the phrase, is beyond his conception, as he knows of nothing criminal in any of his friendly relations, whether definite or indefinite.

Having given his positive and unequivocal denial to these charges in all their length and breadth, the editor of the Cultivator trusts that he will be pardoned for adding, that for the four years, (1840. 1, 2, and 3,) that he was Secretary, so strong was his desire to do all in his power to place the Society upon a sound and stable footing, that he devoted himself most untiringly to its interests—finding a room for its Committee meetings, furnishing the stationery necessary—preparing the vols. of Transactions, reading the proof-sheets, and attending to the distribution of the vols. when printed, without any other "fee or reward," either directly or indirectly, than the consciousness that he was thus essentially benefiting the great interest of agriculture, to which he has devoted a large portion of his time for the last 15 years. In addition to his services, the actual expenses he incurred on behalf of the Society, and which he paid out of his own pocket, averaged from $50 to $100 per annum.

That he was not paid *directly* for these services, was not because the Society was not willing to pay him, but because he did not wish to be paid, his only object being to aid the Society. That he received no benefit from the Society in an *indirect* manner, was because he positively refused it. The Executive Committee proposed to make the Cultivator its official organ, to authorize the publication of its correspondence therein, and would have done it, had not the editor himself objected to it, which he did for the reason that it might be expected to create unpleasant feelings on the part of those interested in the publication of other similar journals in the state. For the same reason, he has repeatedly refused to second resolutions which have several times been made to give volumes of the Cultivator as premiums. Even at the last State Fair at Utica, several vols. of the Cultivator were awarded by viewing committees as premiums; but to prevent all cause for jealousy, the Editor called the attention of the President of the Society to the fact, and requested his assent to an alteration of the award so as to read vols. of the Society's Transactions instead of vols. of the Cultivator. Thus careful has he been, in every instance, where any thing has come up that would look like favoritism to the Cultivator, to prevent even "the appearance of evil," and he defies any one to point to an instance where he has received either directly or indirectly, even one cent for labors "professedly bestowed without fee or reward." To the truth of the statement here given, he ventures to say that every member of the Executive Committee, who was in the habit of attending the meetings frequently enough to make himself acquainted with the facts, will bear testimony.

Having thus shown that there was not a shadow of foundation for these charges, is it using too strong language to pronounce the utterrer of them an infamous slanderer? That his infamy may be proved, and the brand officially placed upon his forehead, the editor of the Cultivator has directed his counsel to demand the name of the writer of the article, that he may be prosecuted for the libel; and if the name of the author is refused, he will hold the editor and publisher of the Agriculturist responsible. He will also demand of the Society, as alike due to it and to himself, that it appoint a committee thoroughly to investigate these charges, that their entire groundlessness may be shown on the most competent testimony.

There are some other things in the article to which we have alluded above, which require notice. The first is in relation to the cost of printing the Society's Transactions. The price of legislative printing is fixed by law, and consequently it did not make a particle of difference as to cost, whether the Report was sent to the Senate or to the House. The writer states that the amount "paid to the printer to the Senate for it, was about $7,000," and that "the profit on it, was stated to him by a printer, at $2,000." This would leave $5,000 as the price for the work, after deducting the profits. Now it so happens that the exact sum paid to the printer to the Senate for the work, was $4,329.13, being $670.87 less than this veracious writer puts the actual cost of the work.

In a previous paper this same writer charged that Mr. Thomas, who condensed the papers for the last vol. of Transactions, had omitted articles from others to make room for his own. The falsity of this having been shown, he now charges in effect that the premiums have been awarded by the Executive Committee, through favoritism to Mr. T. It is, therefore, proper to say, what this writer must have known, that the premiums on the three essays of Mr. Thomas, were awarded by three different sub-committees, of one of which Mr. JOHNSON, the present President of the Society, was chairman; of another, R. L. PELL, Esq., of New-York, and of the third, *H. S. Randall* of Cortland.

It would be an insult both to the Society and common sense to reply to the assertions respecting the management of the Society being under the control of the Cultivator. A mere reference to the names of the officers is a sufficient contradiction of this ridiculous charge. That we have possessed the confidence, so far as we know, of all the officers, during the years of our connection with the Society, is to us a matter of gratulation; but that we have in any way abused it, remains to be shown.

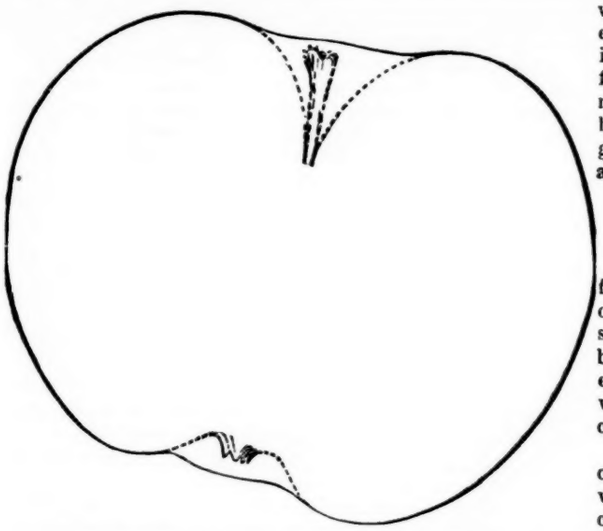
PERMANENCE OF LIME AS MANURE.

J. Watson, in the Journal of the English Agricultural Society, states that a piece of ground containing 166 acres, on which little grew except heath, was more than doubled in value, by a good dressing of lime, applied on the top sward. This was done about 15 years ago, and totally eradicated the heath. "The *lime to this day appears in full action* as its effects annually testify, from the richness and sweetness of the herbage, the texture of which has been thoroughly changed by the action of the lime. The deep green hue and luxuriant appearance of this land in spring and autumn, form a striking contrast with those adjoining, which are still unimproved. The soil is a thin moorish loam in a high climate, resting on the greywack formation."

BENEFITS OF AGRICULTURAL SOCIETIES.

Dr. J. W. THOMSON, who has been either secretary or president of the New-Castle (Del.) Ag. Society, from its organization ten years since, in resigning the latter station at a recent meeting, among other things, said—"A county, for which nature has done so much, would, in all human probability, without their example and exertions, have gone on in her "old paths and accustomed ways." But, when all see and appreciate the rapid and improving state of her agriculture; in ten years, *doubling her crops*, and adding, as estimated, more than *a million of dollars* to the value of her stock and real estate, they must say that the progress of your Society is "*onward*;" and its success has been as complete as its benefits have been widely diffused." A vote of thanks to Dr. T. "for his devoted exertions for the benefit and prosperity of the society during the eight years of his presidency," was unanimously adopted,—a tribute most justly due to his untiring efforts in favor of agricultural improvement. James Canby, Esq. was then elected President; C. P. Holcomb, Cor. Sec'y; James Webb, Rec. Sec'y; also ten vice-presidents, board of directors, &c.

DISEASED POTATOES.—Accounts from England as well as from the continent, speak of the serious damage to the potatoe crop by disease. The London Examiner says, "Externally the disease indicates itself by a moss, or fungus, producing a decomposition of the farinaceous interior."



COMSTOCK'S GARDEN APPLE.—Fig. 105.

It is generally supposed that for *culinary* purposes, fruit of inferior quality will answer; hence we see in works on pomology, and in nursery catalogues, the division into *table* and *kitchen* varieties. This distinction is founded partly at least, in error. The finest apples before cooking, are usually the finest afterwards. Our best and richest table apples are incomparably better for stewing, than ninety-nine hundredths of the "natural" fruit with which many orchards abound, which might be classed as from fourth to tenth rate, and being unfit for eating in hand, is turned off for purposes of cider or for cooking. It is true, that with a heavy admixture of sugar and spices, the deficiency in flavor is supplied, and the intense sourness is disguised; but the amount of these ingredients required, thus to make bad apples good is usually far more in cost than the price of the best-flavored fruit. We have found it much more economical to purchase Fall Pippins for stewing at thirty to forty cents per bushel, than inferior varieties at a few cents only. An experienced housekeeper estimates the quantity of apples needed to supply a common-sized family for a year at thirty bushels; and that eight pounds of sugar at least, would be needed to sweeten even toleraby, a bushel of common "cooking" apples. This would amount to two hundred and forty pounds of sugar for the thirty bushels,—which at eight cents per pound, a low average, would be *twenty-two dollars*. The fruit, at ten cents per bushel, would be three dollars, making twenty-five dollars in all. Now we have found from ample experience, that the Fall Pippin is quite as good, when stewed without sugar, as most of these are well sweetened. So that the actual cost of the ten-cent apples when cooked, is eighty-three cents per bushel; and it would conseqently be as cheap to buy Fall Pippins for this sum as the others at a very low price. We have lately, however, met with a new variety, decidedly superior to the Fall Pippin for this purpose. The two sorts were stewed without sugar or spices; and the dishes, side by side, examined by several competent judges, who were decided and unanimous in giving the decided preference to the new apple.

It appears to have been first cultivated by Nathan Comstock, in the neighborhood of Palmyra, N. Y., who afterwards removed to Lockport, and where only the variety appears now to be known, and where it is called the "Garden Apple." The following is a description, which, with the above figure, was taken accurately from the average of a number of only moderately sized specimens.

Fruit medial size, flattish, sometimes inclining to oblong; the whole surface covered with narrow streaks of light and dark red, nearly a uniform dark red in the sun, and marked with numerous conspicuous light colored dots. Stem slender, usually about half an inch long, variable; set in an even round cavity. Calyx nearly closed, in a moderate slightly furrowed basin. Flesh very strongly tinged with red nearly to the core, and especially at the blossom end; tender, but never becoming decidedly mellow, and rather dry; hence it is not a first rate table fruit, but superlatively fine for stewing, no sugar being required, and the delicate aromatic flavor being equal to the most skilful spicing. The tree is a good bearer, and the fruit always fair. It ripens through autumn.

ROOT PRUNING.

THE practice of pruning the roots of rapidly growing fruit trees, to lessen their luxuriance, and as a necessary consequence, to increase their fruitfulness, is known to some of our readers; but it can hardly be said to have been fairly tried as yet in this country. As late autumn or early winter is the usual season of the year for doing the work, a few suggestions in relation, may not be unacceptable.

New things should be neither hastily rejected nor incautiously adopted. Root pruning in some instances will doubtless be found of great advantage. In ordinary cases, and with most varieties of fruit, the tree will come into bearing quite as early without pruning, as is consistent with its due growth and ultimate productiveness. It has been remarked however, in relation to some of the old pears, that

"He who plants pears,
Plants for his heirs;

out on the other hand, we have known numerous cases with many other varieties, where the trees were in free bearing when only a few years old. Hence a proper discrimination must be used. Trees naturally productive while young, will not need it; but some other sorts, as for instance the Autumn Bergamot, which we have known to stand and grow fifteen years without yielding a solitary fruit, would doubtless be greatly benefited. It should be more cautiously applied to varieties of slow growth, than to those of natural luxuriance.

T. Rivers, an English nurseryman, near London, has practiced it extensively for the purpose of bringing new or untried varieties early into bearing in order to test their quality or genuineness, in the same way that dwarfing by grafting on slow-growing stocks is elsewhere adopted. It has this advantage however, over the method of dwarfing, that while the growth of the latter cannot be controlled except by good or bad culture, and the trees must ever remain dwarfs,—by applying root-pruning merely, with greater or less degrees of severity, or with different degrees of frequency as regards time, any extent of dwarfing or fruitfulness may be produced, or may after a time be wholly relinquished. Some varieties of the pear are found to exist but few years when dwarfed by grafting on the quince; such would be far better if treated by pruning the roots.

Nurseryman who have had occasion to remove large-sized trees in the nursery two or three times, have observed the diminished growth resulting from the operation, and often the early fruitfulness of the trees. By a process entirely similar, Rivers succeeded in throwing his standard trees into early bearing, with the difference, however, of suffering the trees to stand unmoved, and cutting off all the roots, if the trees be small, or nearly all if they be large, at a proper distance from the centre of the tree. This distance was usually at first about ten inches; the second time fourteen inches, the third eighteen, and each subsequent pruning at about the same; thus preserving the dwarf form, so that pears and apples would not occupy more than six feet square for each tree. The work was done by a sharp steel spade, digging a trench round the tree eighteen inches deep, and cutting off the side and bottom roots. The operation is usually repeated every second or third year, while the tree is young, the frequency to be influenced by the growth the trees make, which should be six or eight inches long at least, the season preceding the pruning. If they should be stunted, a greater interval is to be allowed for their recovery. The vigor of the trees is kept up by an abundant application of manure in the trenches, made for cutting off the roots.

This practice has been recommended as possessing the

advantage of placing many bearing trees on a small piece of ground, which might be valuable in towns and villages; and in giving tenants the same advantages as free holders, by enabling them to remove trees of fifteen or twenty years' growth, with nearly the same facility as furniture, the compact ball of fine fibres forming the whole mass of roots, being easily removed entire. In most instances, however, in the culture of fruit in this country, it will be found useful only, in bringing young and thrifty trees soon into bearing, after which the operation may be discontinued, and the trees suffered to attain their full size. For, as dwarfing on small stocks, always shortens the life of the tree, it cannot be questioned that the same result would be produced in some degree, by any other mode of permanent or continued dwarfing. Caution should always be used, as too severe a pruning has sometimes destroyed the tree, and at others, stunted, and injured the quality of the fruit.*

A. J. Downing, in his work on Fruits, states that "several nearly full grown peach, pear, and plum trees, on a very rich soil on the Hudson, which were over luxuriant, but bore no fruit, were root pruned by our advice two years ago, and yielded most excellent and abundant crops last season." A similar result has sometimes been produced by seeding orchards down to grass. which has a powerful tendency to check growth, and as a consequence to increase the productiveness of over-luxuriant trees.

In conclusion, it is proper to remark, that the great and general difficulty in the cultivation of fruit by most persons, is the stunting the trees by neglect; such will of course not need the preceding instructions; and those who give their trees the best culture, on fertile soil, must use a proper discrimination in applying these suggestions.

IRRIGATION OF GARDENS.

We do not know that this has ever been practiced systematically or on an extended scale; although there are certainly facts enough to show its advantages. The practice of the Dutch gardeners in freely and constantly watering many of their vegetable crops, and their consequent fine growth, is well known. During the present season we had a row of red Antwerp raspberries, which exhibited the same influence in a strong light. A part of the row stood under the eves of a wood-house and on the north side of the building, and another part stood in open ground, away from the drippings, but from its advantageous position was subjected to much freer cultivation. But the influence of the water from the roof upon the plants, was very striking throughout the summer, and at the present time, (mid-autumn,) these are *at least triple the size* of the others in open ground. S. Williams, of Waterloo, whose garden was clayey, during the dry hot weather a few years ago, let in the water through small gutters, between the hills and rows of vegetables. "Its genial influence," says he, "was instantaneous; in ten days, my early potatoes grew two thirds in size. In fact, I had never been able to get anything like a fair yield of potatoes in this garden before. Cucumbers grew equally fast; even beans and marrowfat peas bore testimony to its quickening power." McIntosh mentions another case, of the benefit of water upon strawberries. Strawberry beds, three feet wide, were kept watered by trenches between them, about nine inches wide, the trenches being lined with brick, forming four inch walls on each side, and the depth equal to two or three courses of brick. They were laid without mortar, and were for the purpose of preserving the sides of the trenches and for neatness. Water was supplied by a pump, when the ground was dry and the plants were in fruit. "*A much greater crop was thus obtained*, and the plants continued bearing much longer than in beds where there were no trenches for water." This was in the cool and moist climate of England; how much more striking would the results be in this country.

There is not the slightest question, that where water is at command, either from streams, ponds, by pumping with hand, or elevating by wind, the finest results would be produced. The water might be distributed by means of trenches, as already described, or by hose furnished with a nose like that of a watering pot, the latter would doubtless be much the best and most convenient. A very small pipe would be sufficient. Water containing foreign matter would of course be more enriching than pure water. Those who will try the experiment thoroughly, should make the necessary preparations now, at this comparatively leisure season of the year.

* A similar effect on the fruit of young and newly transplanted trees, which are made to bear in consequence of their removal, not unfrequently takes place; hence, purchasers of trees sometimes suppose they have been imposed upon by nurserymen, when in fact the new fruit has as yet had no chance to exhibit its real qualities.

WAGES OF LABOR.

From an instructive article on the subject of agricultural labor in different countries, its wages, and the comparative condition of the laborer, in the London Mark Lane Express, we condense the following facts. In our estimates we have called the shilling sterling 22 cents, though its value is a trifle less; and the comparison, though instituted with the English laborer, can be easily made with those of this country.

In England, the average rate of agricultural wages for an able man with a family, is 9 shillings, or $1.98 cents per week. From this is to be deducted cottage rent at 33 cents per week, leaving $1.63 per week to provide himself with the necessaries of life. In France, a laborer in the same situation receives $1.04 per week; in Prussia, 66 cents; in Germany, $1.02 per week; in Holland and Belgium, $1.20; in Italy, and the Austrian states, $1.15 cents. It will be remembered that these averages are those of the common laborer, shepherds, carmen, and mechanics, receiving rather more. The food which the wages named above will purchase in the several countries, is stated in the Express as follows:

In England the laborer can obtain for his 163 cents, or his week's wages, either 39 lbs. of bread, or 11⅓ lbs. of meat; 7¼ lbs. of butter; 12¾ lbs. cheese; or 174 lbs. potatoes.

In France, with his 104 cents, he can buy either 46 lbs. of bread; 13½ lbs of meat; or 261 lbs. of potatoes.

In Prussia, with his 66 cents per week, the laborer can buy either 36 lbs. of bread; 16 lbs. of meat; or 8¾ lbs of butter.

In Germany, with 102 cents he obtains either 43½ lbs. of bread; 18 lbs. of meat; 11½ lbs. of butter; 24 lbs. cheese: or 54 quarts of beer.

In Holland and Belgium, 120 cents will buy either, 58 lbs. of bread; 22 lbs. of beef; or 460 lbs. of potatoes.

In Italy and the Austrian states, the laborer with his 115 cents, can buy either 50 lbs. of bread; 22 lbs. of beef; 8 lbs. of butter; 8 lbs. cheese; or 168 lbs. of potatoes.

This table is interesting as showing not only the prices of labor in the countries named, but also the price of bread, meat, butter, cheese, &c. It is true the bread is stated by the lb. instead of grain by the bushel, but as the flour of a bushel of wheat, say 40 lbs., will make from 63 to 65 lbs. of bread, an estimate may easily be made of the quantity of wheat or flour a man in any of the countries named, would receive for a week's work. The laborer in this country who receives his bushel of wheat a day, or other articles in proportion, will readily conceive the meagre fare, and slender chance of "laying by anything" which must attend the foreign agricultural laborer. In all these countries it will be seen the value of provisions is at least as great as here, and in some instances much greater. It is only by the comparisons which such authentic statements enable them to make, that the free laborers, the farmers or mechanics of this country, can fully appreciate the advantages of their position.

Onions.—For the past ten years from 30,000 to 60,000 bushels of onions have been raised in the single town of Danvers, Mass.

Fattening Hogs.—The latest improvement consists in keeping them as clean as possible.

WINTERING STOCK.

Throughout a considerable portion of the country, there is a scarcity of materials on which to feed stock the coming winter. The general warmth and moisture of the atmosphere, however, since the occurrence of rains in the beginning of autumn, have much promoted the growth of grass; thus fortunately affording an opportunity for grazing up to a late period of the season. And where fields of rye have been sown for the purpose of giving late fall and early spring pasturage, the favorableness of the season has probably induced a growth which will furnish support in a great degree, to light cattle and sheep. Yearlings, calves, and sheep, may therefore be grazed on such fields, care being taken that the bite is not too short, till snow covers the ground; and the spring growth may be availed of for the same purpose, to a longer or shorter period, according to the necessities of the farmer, or the wants of his stock. If, while the stock is feeding on rye, too lax a state of the bowels occurs, as is sometimes the case, owing to the succulence of the rye, the animals should be fed with some dry hay, and a little salt as a condiment, which will check the tendency to purge.

But under all circumstances, the most economical appropriation of the winter's stock of fodder, becomes an imimportant desideratum. The great aim should be the maintainence of the stock in proper condition with the least expense. The materials at the disposal of farmers for this purpose, consist usually of hay, straw of various grains, fodder of Indian corn, different vegetables in greater or less quantities, with occasionally some meal or "mill stuffs." A general saving of all rough fodder may be made by cutting with a machine. This saving results in various ways, some of which we will specify. 1. Coarse fodder, such as rank hay, straw, or corn-stalks, are thus wrought into a more convenieut form for mastication, by which animals are often induced to eat that which would otherwise be rejected, or only partially consumed. This is particularly the case with clover hay, more or less of which is almost always wasted if fed in the long state, but which when passed through a cutter, if it has been properly cured, is readily eaten perfectly clean. The same remark is applicable, but in a less degree, to straw and corn fodder. 2. By cutting, fodder of inferior quality may be easily mixed in any desired proportions with that which is better or more palatable, and the poorer kind thus be made to conduce to the animal's support. Cutting also affords a convenient mode of mixing meal, shorts, or bran, with fodder, by which may be gained the double advantage of inducing stock to eat less palatable articles, and of so diffusing the meal that all its nutriment is appropriated by the animal. 3. Besides the advantages above mentioned, another and not less important benefit is known to be derived by laboring animals in the additional time it affords them for rest—the cutting performing in a great degree the work of chewing and preparation for digestion. This benefit is regarded as so important by those accustomed to feeding work horses and oxen on cut food, that nothing would induce them to discontinue the practice.

There are cases however, in which the advantages of cutting may not repay the expenses. If the food to be used is wholly hay of very fine quality, and the stock consuming it is not required to labor, it might be so fed that no waste would accrue, or nothing be gained by cutting. But wherever a mixture of fodder would be expedient, or meal, &c., is to be used, or working animals are to be provided for, the advantages of cutting will be found to repay the expenses ten fold.

In times past, the writer has had some experience in feeding stock, and has practiced various modes with a view to economizing food and cost. During seasons of scarcity of hay, a course like the following was adopted with advantage. Good hay and straw, (oat and barley straw are preferable, but wheat and rye straw were often used,) were cut together in equal parts. Chaff of wheat or oats was sometimes used instead of straw. This fodder was mixed with corn meal, at the rate of two quarts of meal to the hundred of fodder. First a layer of six or seven inches of the straw and hay was thrown into a large box, spread over the bottom, and moistened with hot water—then the meal was scattered over it, and afterwards well mixed with forks. Other layers were prepared in the same way, until enough was ready for twenty head of cattle for twenty-four hours. It was made the object to give each grown animal, (cow or ox,) twenty-five pounds of the cut straw and hay every twenty-four hours—that is, each was allowed twelve and a half pounds of hay, the same quantity of straw, and a pint of meal per day. Younger and smaller stock was fed in proportion. Cows giving milk, and oxen when working, had the meal increased—giving in such instances, two to three quarts per day. Sometimes rye meal, shorts, and occasionally oil-cake were used, either by themselves or in connection with the corn-meal; endeavoring to use about the relative quantities of each which would afford the same amount of nutriment; but as we had no definite standard, we gave as nearly as practicable equal weights.

Not the least waste attended this course of feeding, and we found stock to do well on it. Though not fat, they were in good trim, and their coats got into fine order early in spring, so that they went to grass in excellent condition.

In feeding potatoes or other vegetables to store stock, where the quantity does not exceed half a bushel per day to each grown cow or ox, we have usually given them at one feed in the morning, after the first foddering of hay.

Col. Jaques, of Massachusetts, who is known as an economical feeder of stock, adopts the following plan, which we copied sometime since from notes furnished by him:

"For 30 cows, cut with a machine 30 bushels for one feed; one-third common or English hay, one third salt hay, and one-third rye or barley straw; add 30 quarts of wheat-bran or shorts, and ten quarts of oat and corn meal moistened with water. One bushel of this mixture is given to each cow in the morning, and the same quantity at noon and in the evening. In addition to this, a peck of mangel wurtzel is given to each cow per day. This mode of feeding has been found to produce nearly as much milk as the best grass feed in summer."

Stock must not be too much stinted in their food in the fore part of winter, nor should an attempt be made to keep them at once on the poorer kinds of fodder. In the coldest weather of January and February their appetites will be sharpest, and then the poor fodder will be eaten to best advantage. We said their food should not be stinted in the beginning; the reason is, that if they are brought low in flesh in the first of the winter, they cannot stand the inclemency of the weather so well, and they fail rapidly towards spring. Hence if any *pinching* must be done, it had better be deferred to the last end of the season of feeding, as relief may then be shortly expected from the growth of grass. The greatest regularity should be observed in feeding—always giving the food as near as practicable at certain fixed times. But no food should at any time be given to be left—all should be eaten to the last straw which is eatable. Still, substances which are really innutricious—such as the large, sour butts of corn-stalks and the woody stems of large weeds and coarse herbage—should not be given to stock with the expectation that they will be eaten and benefit be derived from them

The importance of shelter to stock must not be overlooked—it having been fully demonstrated that warmth is equivalent to food. The heat of the animal system is kept up in the same manner as flame is supported—that is, by an union of carbon and oxygen. The animal derives its carbon from the food, which, having undergone digestion, is taken up by the blood and thence conveyed to the lungs, where by the act of respiration, it is united with a portion of the oxygen of the atmosphere, and heat is produced. Exposure to a low temperature dissipates the animal heat, just as heat is driven off from any other body similarly situated. It is obvious that the natural temperature of the body must be sustained or the animal will perish. As carbon is the only material by which this heat can be furnished, that substance must either be supplied to the blood from the fat and muscle already

formed, or the blood must obtain it through the medium of food. If the food is deficient, the supply must be made up from a waste of the bodily parts; and the consequence will be loss of flesh and weight, which if long continued may cause the death of the animal, either by finally cutting off the source of heat, or so weakening the system that it yields to the attack of some malady. To sustain the animal in proper condition, then, requires a supply of food proportioned to the degree of cold to which it is exposed; and it is therefore obvious that by avoiding exposure to cold, we save food.

HEDGE FOR WET GROUNDS.

The flats or low grounds, sometimes of great extent, which border on rivers and large creeks, may be fenced by driving piles cut from willow trees, about as large as a man's wrist, into the earth at a distance of about one foot from each other. They are kept together by two poles running along the top, and alternating with the piles, as represented by the annexed figure. The work is to be

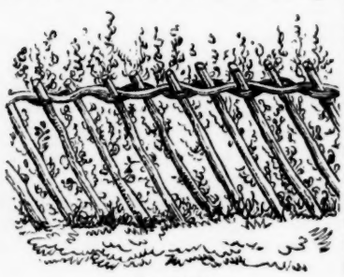


Fig. 108.

done late in autumn or early in spring; the stakes take root and grow; and by sending up lateral branches, soon form a solid and permanent fence. Twisting and interweaving the branches, is an essential part of the operation. The use of a crowbar to make the holes in the earth, greatly facilitates the work. One hand will make, when the materials are convenient, from ten to twelve rods of such fence in a day.

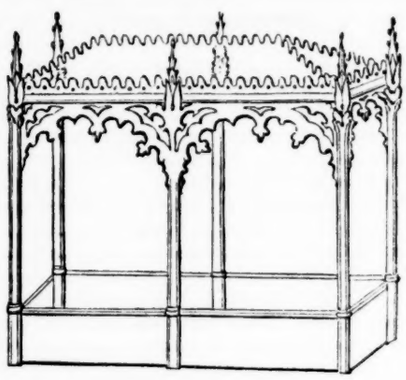
HORTICULTURAL ITEMS.

Roses.—Some idea may be formed of the extent of the cultivation of ornamental plants by the nurserymen of England, from the fact, that at the celebrated Sawbridgeworth Nursery, owned by T. Rivers, a single "quarter of dwarf roses budded this year, contains 80,000 plants; and that in the same nursery, *twenty-four persons* were constantly occupied in budding roses, during the whole of the month of August."

Specific food of Plants.—It is well known that salt has been sometimes recommended for the destruction of weeds in gravel walks, and that most plants are destroyed by heavy doses. There are some plants, on the contrary, which bear large quantities of it,—among which is the *Polygonum aviculare*, a weed well known in this country as well as in England, as growing in paths and frequented places. A gentleman in Scotland, according to the Gardener's Chronicle, in attempting to destroy the weeds in the drive through his park, by the use of salt, so increased this weed, that the road was literally rendered green by it.

Transplanting the White Pine.—Three years ago, a neighbor went half a day's journey and procured about 60 young trees of the white pine, from three to six feet high, for the ornament of his grounds. The trees were taken up and set out with ordinary care, with the removal of no soil upon the roots. Only two of them are now living, and one of these is in quite a doubtful state, as to life or death. About the same time, the writer procured fifteen trees of the same species, from five to twelve feet high, removing with them a large cake of earth, (not frozen) sufficient to keep them steady in the wind without staking. All of them are now living, and most of them growing vigorously.

Californian Plants.—The celebrated botanist, Hartweg, has been sent out this fall by the London Horticultural Society, to explore the ground which had just been commenced some years ago by David Douglass, before the death of that eminent individual. Hartweg is to spend three years in California, and many handsome plants will doubtless be added to those already in cultivation.



FLOWER CASES.—(Fig. 109.)

A portable green-house, called from the name of the inventor, Ward's Cases, has lately been brought into use in the neighborhood of London. It consists of a box or trough for holding the soil, made of zinc, covered with a frame set with glass, high enough to admit of the free growth of the plants, somewhat in the shape of a bird-cage. The cases being tight, keep in the moisture; and the plants, though standing in a very dry room, have all the advantages of a moist atmosphere. The cases also prevent injury from sudden changes of temperature, and afford considerable protection from frost; they also keep the plants perfectly free from dust.

There should be one hole in the bottom of the zinc trough to let off the surplus water. A door admits entrance to the case. When exposed daily to a few hours of sun, the plants do perfectly well *for weeks* without any attention whatever, the moisture of the soil being entirely prevented by the glass casing from evaporation. The whole may stand upon a table, and no pots being needed for the plants to stand in, the beautiful appearance of a miniature conservatory is presented.

The bottom should first be lined with broken earthenware, and then turfy loam to admit drainage. The hole for the egress of water, after being left open for twenty-four hours, may then be closed, having by that time, allowed enough to pass off.

Such plants are said to do best as grow naturally in moist and shady situations. Among those which have succeeded finely, are crocuses, winter aconite, the various cactuses, aloes, primroses, begonias, anemones, myrtles, jasmines, &c.

Sir W. J. Hooker, an eminent British botanist, says in a letter to the inventor, "Splendid as is the hot-house and green-house collection at Woburn Abbey, I doubt whether that gives more pleasure to the noble proprietors and their numerous visitors, than the beautiful little collection in Mr. Ward's case, that occupies a table in the library, and flourishes without requiring the skill of the gardener in its cultivation."

As we republican Yankees cannot very well afford splendid green-houses, this must be the very thing we want.

CUTTING HAY FOR STOCK.

Mr. Thos. W. Ward, gives in the Massachusetts Plowman, some important facts in regard to the utility of cutting hay for feeding cattle. He says he has for years practiced cutting hay for his horses, which, mixed with meal, he thinks far the best and cheapest feed they can have. He also finds a great advantage in cutting coarse hay and straw, which he says cattle will eat readily if cut fine and mixed with only a third part of good hay. He says, "to test the value of the cutter in point of good economy, I adopted the following method, viz: After having kept four oxen on long hay for some days, I weighed hay enough to keep them 24 hours. At the expiration of which I weighed what hay was left, together with what little remained in their crib, and found they had eaten 104½ lbs. of hay. Their excrement evacuated during the same time weighed 178½ lbs.; exceeding the quantity of hay by 78 lbs. They were kept in the barn al

the time except being driven to water, after which they were immediately put in the barn. While out, only one ox vonded, of this there was no account made.

"I then kept them 24 hours on cut hay from the same mow, thinking that in this time they might empty themselves of the long hay. I then weighed 104½ lbs., (the same quantity they ate of long hay,) from the same mow—kept them in the barn and watered as before. With them there was no difference except in this instance, they all returned to the barn without having anything pass from them.

"At the end of the 24 hours I weighed the hay that was left, and found they had eaten 86 lbs. only; and their excrement during the same time weighed 208¼ lbs., exceeding the weight of cut hay eaten, by 122¼ lbs. It was my purpose in each instance to let them have what they needed, and no more; in neither case was there a waste of hay, and in each case the oxen were comfortably filled. They had done no work for several days before being put on the trial, nor did they do any while on trial, nor during the intervening 24 hours." These facts show a saving in this instance, of about 18 per cent. in favor of cut hay, and also an increase in weight of the excrement, of 15 per cent. Thus, says Mr. W., "we spend less hay and make more manure, which is the farmer's capital." He thinks the cattle did as well when fed on the cut hay, as when fed on the long. He says he will not attempt to solve the mystery in regard to least hay making most manure.

THE POTATAO ROT IN EUROPE.

The extensive destruction of the potato crop in Europe has awakened a great deal of inquiry among scientific men and through all classes of people. The Editor of the London Gardener's Chronicle, estimates the loss at five-sixths of the whole crop of Europe. The speedy destruction in many cases, may be inferred from the statement of a correspondent of that paper:—"Two days ago, twelve acres were still safe; they are now gone." But the further investigations have been pushed, by men of the most eminent abilities, the greater seems to be the doubt which hangs over the cause and cure; and the scientific world appears yet divided between the opinion of its being a gangrene or murrain, or the blighting effects of a fungus.

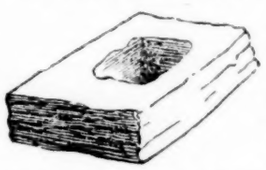
The opinion which has prevailed to some extent in this country, as well as in Europe, that common salt was an efficient remedy, and which was strengthened by the fact that on parts of the sea-coast, exposed to saline moisture, the rot had not appeared,—appears to be overthrown by failure in other places on the sea, and where in experiment salt was directly applied.

All that scientific men have yet done, is to *suggest experiments* for determining the nature of the malady, and for saving such parts of diseased potatoes, as may remain uninjured, by chemical process. The latter has been to for use in cooking for food, and for mixing with grain flour has been manufactured to a considerable extent. Kiln-drying the diseased potatoes at a temperature not higher than 180 degrees Fah., and not longer than fifteen or twenty minutes, has been found at once to arrest all de- a considerable degree successful; and good potato flour, cay or progress in the disease. Professor Henslow succeeded in obtaining from half a bushel of *sound* potatoes, 4 lbs. 10 oz. of flour; and from the same quantity of diseased and decaying tubers, 3 lbs. 1 oz. The quality of the latter was equally good, the starch of potatoes remaining a long time uninjured in diseased ones, and only lessened in quantity. The process of extracting the flour, consists essentially, in first washing the potatoes, then grafting or mashing them to a fine pulp, (which might be done rapidly by means of a common grater cider-mill;) and washing the pulp repeatedly with water. The washing may be conveniently done by placing the pulp on a canvass sieve or bag, and stirring it well, while a stream of water is suffered to run upon it, into a large vessel beneath. When the water ceases to become milky, it has carried off the flour; and the coarse fibrous matter remaining behind may be thrown away. The flour water, after standing 10 minutes to settle, is racked off, fresh water is applied, is suffered again to stand 10 minutes, and again racked off; the process is repeated several times, until it is thoroughly washed. It is then dried on stretched flannel.

A hundred weight of good potatoes yields about 18 lbs. of good starch; the quantity however varies. The average proportion of water in good potatoes, is about 80 lbs. per hundred weight. Professor Henslow, hired his potatoes grated by hand. "The cost of grating 7 sacks was 17*s*. 6*d*.; the flour saved 122 lbs.; call this 8 stone, which may be used instead of 8 stone of wheat-flour, at 2*s*. 6*d*. per stone, and I lose nothing; whilst the poor graters have gained, and the amount of human food saved, will tend to keep down prices."

CHEAP CONTRIVANCES—SPLITTING WOOD.

A cheap and simple contrivance, costing but a few minutes labor, and used every day in the year, is often worth more than the complex and ostentatious machine but rarely needed in practice.



Every man who splits up stove-wood, knows that by the usual way, he has to spend two-thirds of his time in setting up the block ready for the blow of the axe.

To save this time, we have adopted the following way, and found it to save at least two-thirds the time, equal to at least several dollars a year to every man who has to keep one stove going.

A large flat block of wood, six or eight inches thick, and nearly two feet wide, has a large hole cut through the middle about eight or nine inches square. The block of stove-wood is set on end in this hole, and quick and repeated strokes of the axe splits it up finely, without once touching it with the hand.

If such a block is not easily to be had, take two crooked logs, and pin them together.

CULTURE OF BROOM CORN.

L. Tucker, Esq.—I am not prepared to give satisfactory answers to your correspondent, on the subject of broom corn, in every particular; but will briefly state, that we have, the past summer, had about thirty-five acres under cultivation; about half on the Mohawk low lands, (or flats) which is the soil generally perferred, the balance adjoining, on a gravelly soil. On account of the extreme drouth, the low ground has done much the best.

2d. As to the profits, compared with other crops. Much depends on the success you may have; some seasons it does much better than others; the past has been too dry to give a good large brush, but with us the seed has been an extraordinary crop—averaging nearly or quite fifty bushels to the acre, and most of it very full and heavy, weighing 31 lbs. to the bushel, and is excellent for fatting hogs. They eat it greedily, and thrive on it as well, if not better, than on Indian corn. An acre of good broom corn should yield from four to six hundred lbs. of brush; and the seed, when good, is worth, in its rough state, as much as oats for feed.

I have now on hand, enough of prime seed, to plant two hundred acres, and can supply your correspondent with any reasonable quantity, at the lowest market price. My seed is the largest and best I have ever seen. A letter directed J. D. F., West Schuyler, will be attended to.

As to the query, "will the increased production be likely to over stock the market?" Like every other product of the soil, there may be an over stock some years, more than others, but thus far the demand has kept up with the product. J. D. F.

West Schuyler, Herkimer co., Nov. 1845.

Weeds.—Succulent weeds may be converted into a blackened and lifeless mass, applicable as manure by mixing them layer for layer in a compost with quick lime.

NUTRITIVE VALUE OF DIFFERENT KINDS OF FOOD.

The following table, condensed from the Gardener's Chronicle, gives the value of different kinds of food, as deduced from theory, and from the practical observations of several eminent agriculturists. The comparison is interesting, and shows in some cases the near coincidence between theory and experiment, and in others the wide departure in their results. The table also exhibits the the quantity of water in each substance, and the proportion of nitrogen entering into its composition.

It will be observed, as a reason of the discrepancy often noticed, that on different animals, and on different classes of animals, the same amount of food may give very different results, some animals being more affected by certain kinds of food than others. It must also be remembered that the same kind of food varies in nutritive value, with soil, climate, season, culture, mode of feeding, as ground or unground, and other controlling causes.

The nutritive equivalent is the quantity required of each substance to afford nourishment equal to 100 lbs. of common natural meadow hay.

Different kinds of Food.	Water per cent.	Nitrogen per cent. Substance dry.	Nitrogen per cent before dried.	Nutritive equivalent according to: Theory.	Block.	Petri.	Meyer.	Thaer.	Pabst.	Flottow.	Pohl.	Crud.	Weber.	Dombasle.
Common Natural Meadow Hay,	11.0	1.34	1.15	100	100	100	100	100	100	100	100	100	100	100
Ditto, of very choice quality,	14.0	1.50	1.30	98										
Natural meadow-hay, picked,	18.8	2.40	2.00	58	108	100	....	....	....	100				
Lucerne, free from woody stems,	16.6	1.66	1.38	83	....	90	....	90	100	....	....	90	90	90
Red Clover, cut in flower, dried,	10.1	1.70	1.54	75	100	70	....	90	100	....	....	90		
Ditto, Green,	76.0	.....	9.64	3 1	430	....	....	450	425	500	450			
New Wheat-Straw,	26.0	0.36	0.27	426	200	360	150	450	300	175				
Old Wheat-Straw,	8.5	0.53	0.49	235										
Oat-Straw,	21.0	0.36	0.30	383	200	200	150	190	200	175			150	
Barley-Straw,	11.0	0.30	0.25	460	193	180	150	150	200	175	....			
Pea-Straw,	8.5	1.95	1.79	64	165	200	150	130	150	200	90			
Mangold-Wurzel leaves,	88.9	4.50	0.50	280	600	....	....	600	....	....	600			
Hearted Cabbages,	92.3	3.70	0.28	411	556	500	250	429	600	600	....	500		
Ruta-Bagas,	91.0	1.83	1.17	676	....	300	....	300	250	....	350			
Common Turneps,	92.5	1.70	0.13	885	533	600	290	526	450	500	525	525	500	
Mangold Wurzel,	87.8	1.70	0.21	548	366	400	250	460	250	300	....	255	....	261
White Silesian Beet,	85.6	1.43	0.18	669	....	....	....	....	....	....	....	....	....	220
Carrots,	87.6	2.40	0.30	382	366	250	225	300	250	....	266	260	266	307
Potatoes,	75.9	1.50	0.36	319	216	200	150	200	200	250	200	210	....	187
Field Beans, (English,)	7.9	5.50	5.11	23	30	54	50	73	40	....	50			
White Peas, dried	8.6	4.20	3.84	27	30	54	48	66	40	....	47			
Kidney Beans, (White,)	5.0	4.30	4.58	25	....	39								
New Indian-corn,	18.0	2.00	1.64	70	....	52								
Buckwheat,	12.5	2.40	2.10	55	....	64								
Barley,	13.2	2.02	1.76	65	33	61	53	76	50	....	....	....	....	47
Oats,	20.8	2.20	1.74	68	....	71	....	86	60	....	50			
Rye,	11.5	1.70	1.50	77	33	55	51	71	50	44	38			
Wheat,	10.5	2.33	2.09	55	27	52	46	64	40					
Fresh bran,	37.1	2.18	1.36	85	105									
Wheat chaff,	7.6	0.94	0.85	135	160	....	....	....	....	....	175			
Oil-cake, (Linseed,)	13 4	6.00	5.20	22	42	108	....	...	....	....	....	....	57	
Rice, (Piedmont,)	13.4	1.39	1.20	96										

From the above practical results, we have taken the mean, of several of the most important articles, from which our readers will see at a glance the average results of all the experiments, and which will be interesting as well as very valuable, as affording a comparison of the value of the various substances. We have also placed alongside the equivalent, according to theory, to which the results of the experiments sometimes approach quite near, and at other times are quite remote. The whole, however, cannot fail to throw light on the subject; for though strict accuracy cannot be expected where so many causes must combine to vary the results, yet a tolerable approximation *for comparison*, is doubtless in nearly every case attained.

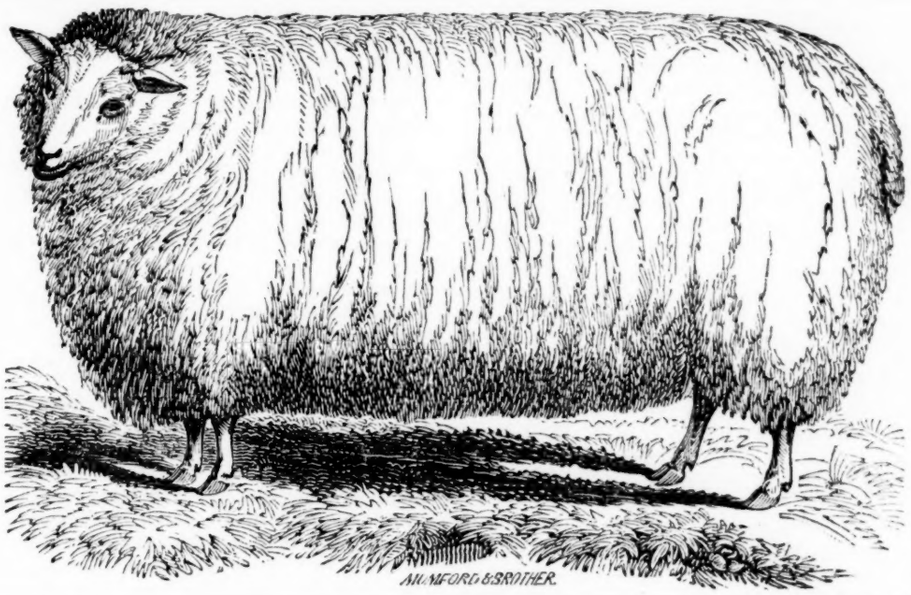
	Mean of exp's.	Theory
Hay,	100	100
Lucerne,	92	83
Red clover hay,	94	75
New Wheat-straw (variable,)	272	426
Oat-straw,	166	383
Barley-straw,	175	460
Pea-straw,	169	64
Cabbages,	419	411
Ruta-bagas,	300	676
Common turneps,	494	885
Mangold Wurzel,	317	548
Carrots,	276	382
Potatoes,	201	319

	Mean of expr's.	Theory.
Peas,	47	27
Indian Corn,	52	70
Barley,	53	65
Oats,	67	68
Wheat,	46	55

LIGHTNING CULTURE.

Much interest has been excited by the experiments of Dr. Foster in Scotland, to show the influence of atmospheric electricity on the growth of plants. James Cowie and two distinguished farmers called on the Doctor, and the result of their examination is given in the London Gardener's Chronicle. Not finding the proprietor at home, they made inquiries of a young man, a servant on the farm, who, on being asked if the crops were better where the poles and wires were placed, than on the rest of the field, answered,—"Weel, the crop sud be better, considerin' the additional pickle dung it got beside the wires, but that he could not say there was any difference observable."

Productive Apple-tree.—The Germantown (Pa.) Telegraph states, that there is an apple-tree near that place, which has repeatedly borne over hundred bushels of apples at one crop.



LEICESTER WETHER.—(Fig. 113.)

The above is a portrait, from life, of a Bakewell or Leicester wether, bred and fed by Maj. PHILIP REYBOLD, of Delaware, and slaughtered in Philadelphia, in March, 1842. He was two years old and weighed alive, 251 lbs.—the four quarters 147 lbs., or nearly 37 lbs. per quarter. The saddle weighed 78 lbs. and cut 4½ inches of fat on the ribs. Maj. Reybold's is, we believe, the largest of any long-wooled flock in America—numbering, as we have been informed, over 600 of the pure blood. He has taken great pains in breeding, and has found his flock highly profitable. One of his sons has during the past season been to England for the purpose of procuring bucks, which, if possible, might still farther improve their sheep. He returned, as we hear, with two very large and splendid bucks of what are usually called in England the Improved Cotswold, or Improved Oxfordshire breed. This breed originated, according to British authors, by a cross of the Bakewell or Leicester, with the old Oxfordshire or Cotswold sheep. They are highly prized as fattening sheep, possess good constitutions, and yield very heavy fleeces of long wool. They and the Leicesters, carry the principal prizes for long-wooled sheep in England. The increasing demand in this country for long wool, and the increasing demand also, for fine mutton, renders these sheep particularly adapted for situations convenient to market, and the profits which they afford in such situations are undoubtedly equal, at least, to those given by other breeds under any circumstances.

WOOD AND WOOD-LANDS.

The fore part of the winter is the best time for cutting and securing the year's wood, as well as for clearing off the forest preparatory to cultivation. Before snow falls, or while there is little on the ground, it is much more convenient and pleasant working in the woods—the trees can be readily cut close to the ground, the small limbs and brush can be easily separated from the wood and piled by themselves, and the workmen are not obliged to plunge their hands in cold snow to pick out the wood, which is always more or less buried if the snow is deep.

Few things are of more consequence to the farmer than a judicious management of his wood-lands; and yet nothing is generally more neglected. Such in fact has been the inattention to this subject, that a scarcity of wood and timber has occurred in many districts naturally provided with abundance. After having cut off the old or "first growth," as it is called, fires have in some instances been allowed to sweep over the ground with such intensity as not only to prevent the stumps from sprouting, but also to destroy most of the seeds of trees contained in the soil—thus leaving the lands comparatively a barren waste. Besides this, cattle are often allowed to range at will, and are indeed sometimes compelled to obtain their living by brousing on the sprouts and young trees, which permits only a scrubby, worthless growth.

It has been sometimes recommended to cut out old decaying trees first, but the practice is attended with several objections, and we believe experience has proved that the best course is to cut off the entire growth, clean and smooth. In attempting to cut out the old trees, a great many of the smaller ones are inevitably broken down and spoiled, and as the growth is always kept uneven, the greatest quantity is prevented from accumulating on the ground at once.

Where fuel is the object, the course now pursued in those sections where wood-lots are turned to the best account, is, to cut everything close and clean once in fifteen to twenty years. The lots are protected as much as possible against fires, and cattle are kept entirely off. Lands producing hard-wood are in this way made to yield from fifteen to twenty cords of excellent wood per acre at each cutting—giving a growth at least equal to a cord per acre annually.

On cutting the primitive or old growth from a lot, the succeeding growth cannot be relied on from sprouts—especially if the trees were much on the decline. In such cases we have usually to wait for a generation to come from seed, which generally takes a considerably longer time than is required where a thrifty growth is cut; because in the latter case the stumps sprout vigorously and as great a growth is obtained in one year as ordinarily takes place from seed in four years. This is one of the great advantages of frequent and clean cutting—a rapid, even, and thick growth always springs from the stump, and we have never to wait for the slow and somewhat uncertain process of a renewal from seed.

Trees had better be cut close to the ground, whether the lot is intended to grow up again or to be cleared. When there is a great depth of snow on the ground, it is difficult to cut trees closely, and we sometimes see the stumps from two to three feet high; but we think sufficient care is not generally taken to cut low. The best of the wood or timber is generally next the ground. If the land is to be cleared, the plow and the harrow can be made to work much nearer the stumps if they are cut close to the ground, and if the lot is intended to grow up, the suckers or sprouts grow much more vigorously from low than from high stumps. If the stumps are left high, the sprouts often come out on the sides or near the top, and the winds break them off, or the stumps rot and they perish. These remarks of course apply to hard-wood trees; resinous ones never start from the stump.

In our next we shall give an article on this subject, received since the above was written from W. Bacon, Esq.

FOOT-ROT IN SHEEP.

We have recieved several communications in reference to the article on this subject by "GRAZIER," in our August number. The opinion of Grazier that the foot-rot is not contagious, is controverted. A correspondent with the signature "E. P.," who dates at Bridport, Vt., thinks it posssble that the error in regard to the non-contagiousness of this disease, was imbibed from having mistaken another disease with which the feet of sheep are sometimes attacked, for the real foot-rot. This *spurious* kind of foot-rot, according to E. P., "is caused by a stoppage in the secretory outlet between the claws, or from inflamation by bruises, gravel, &c., and cannot, from the nature of the case, be contagious." This, E. P. thinks, is the disease to which Grazier refers, and gives directions for curing. "It is," says E. P. "very easily managed, and I have never known more than four or five lame sheep to the hundred affected with it at a time." But the *real* foot-rot, E. P. thinks "a very different article to contend with, though in its first appearance, it somewhat resembles the above."

In proof of the contagiousness of foot-rot, E. P. states the following case:—"Sometime between the years 1826 and 1830, Gen. Sumner, of Boston, had a flock of merino sheep kept in Addison county, Vt. About the latter year, he purchased some imported Saxon sheep, some of which had the foot-rot, and added them to his former flock. About the same time he appointed an agent in my immediate neighborhood, to have the care of the sheep. The foot-rot spread with great rapidity through the whole flock. This was the first time I ever saw the disease, or heard of its being in this country. Nor did this infectious disorder stop with this flock; several others became infected with it by being driven along the road where the lame ones had been previously driven, much to the annoyance of their owners, who at that time knew nothing of the disease or its remedy; consequently great losses were sustained before they could get rid of the detestable plague.

"A portion of Gen. S.'s flock were kept adjoining my farm. On the morning of a particular day, my sheep were salted, and at noon of that same day, a part of them were discovered to be mixed with Gen. S.'s sheep, and were immediately separated, so that they could not have been together only a few hours. Thirteen days from that time, one of my sheep was lame; it was caught immediately, and doctored, and in a few days got well. In about two weeks from the first one being lame, there were half a dozen, and in about eight weeks, one half the flock was lame; a serious business, that lasted me more than two years of doctering after 'Grazier's' mode of making an application to the lame ones only. I have known several flocks infected with the foot-rot by being put in a pen to be washed, where diseased ones had previously been, and by experiment, I have known sheep that had never before been exposed, thoroughly impregnated with the foot-rot where the lame had been kept and removed *four weeks* before the well ones were put in. Indeed, so well is it understood in Vermont that the foot-rot is contagious, that a law has been very wisely passed for restraining sheep so infected within proper limits, and by reference to the records of our courts, it may be seen that suits have been sustained and damages recovered, for the neglect of keeping sheep so disordered, according to law."

In regard to the symptoms and cure of the foot-rot, E. P. observes—"When a sheep first begins to be lame with the foot-rot, it is very easily detected, the tread of the foot being different from ordinary lameness, bearing directly on the toe of the foot, causing the ankle or fetlock joint to project forward, and if in the fore foot, the animal will frequently stumble. On examining at this stage, there is frequently nothing to be discovered by the eye, but on handling the foot it feels hot, and throws off a smell emitted by no other disease than foot-rot. By pressing the foot in various places, it will be found most tender at the heel. It commences at the heel of either claw, frequently between the claws, but always under the skin near where the hoof or horny substance commences, and it is not uncommon for it to work its way over the whole foot between the hoof and quick before it makes its external appearance, causing the animal much distress and loss of appetite. It however eventually breaks out a rotten sore.

"The difficulty of getting this loathsome disease out of a flock, consists not in its being hard to cure, but from its highly contagious character; continually going the rounds; by the time one sheep is cured another takes it and so on, the same sheep having been known to take it and be cured of it three times in one season.

"As to cures it has been long known that blue-vitriol [sulphate of copper] readily effects the purpose in a single sheep; but for the reason before stated, many farmers have been baffled in thoroughly trying it, and have kept the disease in their flocks for years. The following prescription I have never known to fail of effecting an entire cure if thoroughly applied:

Copperas half a pound,
Alum half a pound,
Blue-vitriol one pound.

Dissolve all in two gallons strong tobacco water. This compound may be applied by means of a small piece of sponge, tied to a handle of convenient length. The sheep should be caught, one by one, every foot cleaned, the long toes taken off by the clippers. Then with a sharp knife the foot should be pared and examined. If it is sound, take the swab and thoroughly wash the foot all over as high as the fetlock joint; hold on to the sheep till a little dried, and turn out to pasture. If, on examination, a foot is found diseased, every particle of hoof should be pared away over the affected part; better pare a little too much than not enough; if blood follows the knife it will do no harm. The foot being thus prepared, apply the wash as before, and then turn them out.

"In this compound, the vitriol is the main ingredient in performing the cure, the tobacco is healing, while the alum and copperas *set* the vitriol and it forms a coat like paint, which adheres to the foot, cures the lameness, and acts as a preventive for the well ones. If a pasture is procured that has not been impregnated with the disease, and the sheep are transfered to it, three applications, one week apart, will effect an entire cure; but if the sheep are to remain in the same lot, the three applications should be made as above, and they should besides, be run over once a month during the summer, or until the disease is entirely eradicated from the soil. I have seen many experiments tried with doctoring the lame ones only, and by driving them over a bed of lime and various other ways, without the desired effect. Neither are high and dry pastures any guard against the ravages of this disease, as has been abundantly tested on the high and rocky pastures of Crown Point, and on the mountain summits of Vermont. But in no instance have I known the above remedy, faithfully applied, without performing a cure."

Another correspondent who signs "TRUTH," and dates from Hoosick, N. Y., writes in reference to the contagiousness of foot-rot:—"I know a flock of sheep that was almost surrounded, for years, by neighboring flocks affected with foot-rot, but this flock remained perfectly free from the disease until one, thus affected, accidentally got into the lot with it. The distemper soon spread through the flock. It would seem singular indeed, that, immediately after the diseased sheep had got in with sound ones, they should all *bruise their hoofs* in such a particular manner as to produce such sameness in the result. * * * I will state for the gentleman's information, that the space of time between a sheep's being exposed and the symptoms becoming visible, varies from nine to fourteen days."

The question as to the contagiousness of foot-rot, is, it must be admitted, one of great importance; and we deem it therefore proper to give as full an understanding as possible of the case. It may not be generally known to our readers that this has formerly been made the subject of much controversy in Europe, both among farmers and scientific writers. Mr. Youatt, in his excellent work drawn up under the direction of the British Society for the Diffusion of Useful Knowledge, enters at length into the discussion of the subject; but he comes at last to the conclusion that the balance of evidence is decidedly in favor of the contagiousness or infectiousness of this dis-

ease. Mr. Youatt, however, holds in common with Prof. Dick, and many other veterinary writers, that foot-rot is sometimes originated spontaneously—that is, it is caused "by the feet having been macerated by the soft and damp pastures on which they have trodden, and the internal part of the foot being thus denuded and injured." He says—"There are many flocks in which it would be idle to seek for the cause of foot-rot in infection"—* * * and adds, "It is almost superfluous to argue that there are numerous diseases that may be produced by natural causes, and yet are communicable from one animal to another."

Mr. Youatt then goes on to relate many experiments which have been made by different persons to test the point under consideraion, by inoculating the feet of sound sheep with the virus of foot-rot. Many of these attempts at inoculation failed, but several succeeded and clearly established the fact of contagiousness. In one class of experiments referred to, conducted by Prof. Gohier, the disease was only communicated by inoculation in two cases out of six; but in the experiments of M. Favre, a Genevese veterinarian of high standing, out of thirty-two sound sheep inoculated with the matter of foot-rot, twenty became infected. "On one of the sheep," says Mr. Youatt, "that would not take the infection, he operated six times ineffectually. He tried once more and foot-rot was produced." In the cases where the disease was produced by inoculation, it was sufficiently marked to leave no room for doubt.

P. S. Since writing the above we have received a communication from Rutland, Vt., signed "Farmer." This writer takes the same ground in relation to foot-rot and the communication of "Grazier," as our correspondents above mentioned. But upon carefully reading over his article, we cannot discover any important point that is not already sufficiently discussed and explained, and any further remarks would therefore seem to be unnecessary.

FARMERS' CONFERENCE MEETING.

We find in the *Onondaga Standard*, a report of the doings of a Farmers' Conference, held at Marcellus, in that county, on the 6th Nov., from which we take pleasure in presenting the following extracts. We hope many of these conference or club meetings will be held by our farmers during the present winter. We know of no measure cauculated to have a more decidedly beneficial effect than such meetings, where, with the freedom of the fire-side, each one gives the details of his practice and the results of his experience. In this way, much useful information is imparted, and a spirit of inquiry and investigation awakened, from which the most happy results may be anticipated.

PREPARATION AND APPLICATION OF MANURES.

The meeting having been called to order, John Sandford, of Marcellus, was called to the chair, and Jas. M. Ellis, of Onondaga, appointed Secretary.

Mr. Brown, Pres't of the Co. Agricultural Society, said: The meeting had been called by him in pursuance of a resolution of the Society, passed at the last annual meeting, and its object was the free and social conference of the farmers of our county upon the leading questions of practical Agriculture. The subject to be discussed at the present meeting was the preparation and application of manures.

Mr. Brown has ascertained by careful observation that he has saved by his attention to the saving and preparation of manures, more than sufficient to pay his town and county taxes. His plan is to stable all his cattle and to litter his barn yard twice a week in winter, with straw, and allow his sheep, and his cattle, when out of the stable, to run over it and tread it in, with the manure they deposite upon it. He sprinkles plaster on his stable floors, and over his yard in sufficient quantities to absorb all the volatile portion of the manure, so that there is no smell arising from it whatever. He cleans his yard in the spring, and places the manure in a heap under his shed, mixing plaster with it plentifully as it is piled; except such a quantity as he may need for his hoed crops, which he prefers to take out fresh and plow it under. Mr. Brown finds that plaster, applied to his manure heap and his stables, have added 50 per cent to the strength and value of his manure. He sows plaster over his barn yard once a week.

Mr. Brown has used salt as a manure with great benefit. He sows it broadcast upon wheat and grass at the rate of 3 to 5 bushels to the acre. On grass he would sow it in the fall—for wheat he would sow it just before the wheat is sown. He found that 3 bushels of salt to the acre on his wheat field, occasioned an increase of 17 bushels of wheat to the acre over that which had no salt. The soil was a strong loam with a stiff subsoil. Mr. B. had not tried salt to kill wire-worms.

Mr. Shepherd thought salt would kill angle-worms.

Mr. Sandford asked Mr. Brown why he preferred fresh manure plowed under for corn and hoed crops.

Mr. Brown said he preferred it in this state because it made the ground warmer and more friable—and was more enduring in its effects.

Mr. Sandford asked if more benefit was not derived from manure used in this way in all cases?

Mr. Brown thought not, because on sowed crops it brought too many weeds, and on sandy soils it leached away.

Mr. Sandford did not believe any soil *leached* in the sense that term is commonly used. Mr. Van Rensselaer of Albany, had proved by careful experiment that such could not be the fact. He had filled a barrel with perfectly clean sand and turned on it water from the farm yard which was saturated with manure, and had found it always came through pure and limpid, and on examination he had never found the least trace of manure lower than one inch and a half below the surface. This proved to his mind that sandy lands did not leach in the sense generally understood, but that the failure of manure on sandy soil is owing to the too rapid evaporation of the more valuable portions of the manure, there being no mineral substances in the sand to fix and retain gases.

Mr. J. B. Burnet was inclined to credit this theory. He thought the fact that all complaints of leaching were so suddenly removed by the application of a light deposit of marl or clay or muck, was corroborative of this theory. An inch or two of marl or clay or muck spread upon the surface of a sandy soil would not prevent filtration certainly. But it removed the complaint of leaching invariably, and rendered manures on such soils effectual and durable. This result must be accounted for by the supposition that marl or clay or muck will fix the volatite portions of the manure, and prevent evaporation.

Mr. Chester Moses would state two facts which he thought conflicted with this theory. 1st. He had always observed that those sandy soils which had a stiff subsoil were more retentive of manures than those with a loose subsoil. 2d. He knows that the wells bordering on the Farmington Canal were filled with the fœtid matter of said canal, notwithstanding there was a wide bank of sand between the canal and the wells.

Mr. Ellis thought the latter fact might be explained by the supposition that the sand had become saturated with the impurities of the water by long continued filtration.

Mr. Curtis Moses thought this a plausible explanation, and it was supported by the fact that the wells were perfectly good for some considerable time after the canal was filled.

Mr. Sandford would remark that whatever objection might be brought to Mr. Van Rensselaer's theory, the experiment he had described was a very simple one, and each person might try it for himself.

Mr. Brown resumed the subject of the preparation of manures, and remarked that he thought all manure should be sprinkled with plaster as soon after its deposition as is convenient. He had a sewer from his sink through his vault, which conveyed the night soil, and suds and dish water, to a reservoir near his barn, which reservoir he kept constantly supplied with plaster. He found the manure thus made very valuable, and would recommend the practice to others.

Mr. Moses and Mr. Sandford had no doubt of the efficacy of plaster in fixing the gasses of manure.

Mr. Sandford had seen large quantities of packing sal

carted out of New-York city by the farmers of Long Island and New-Jersey. They consider it a very valuable manure there.

Mr. Ellis believed that the bitterns and ashes from our salt works were valuable manures.

Mr. Brown thought that stiff soils should be plowed in the fall and exposed to the action of frosts. It thus was rendered friable and its particles could be more readily dissolved and taken into the circulation of the plants. Loose soils he thought were injured by fall plowing.

Mr. Ellis would have all lands plowed in the fall, if he could be sure of a covering of snow all winter. He thought plowed land absorbed a great deal of ammonia from snow.

Mr. Brown remarked during the meeting that a friend of his, an excellent farmer, had observed to him that he always derived the greatest benefit from plaster as a manure for wheat, when he sowed it on his summer fallow.

MONTHLY NOTICES.

We are indebted to Capt. Silas Allen, of Shrewsbury, Mass., for some fine specimens of the Baldwin, Seek-no-further, Spice, Sugar Sweeting, Roxbury Russet, and Detroit apples, and we are happy to have an opportunity of speaking of Mr. A.'s well deserved success in fruit-raising. His peaches, in particular, have long been celebrated in the Worcester market, and have, we believe, several times taken prizes at the state and county fairs. He has raised during the past season, about one hundred bushels of this fruit, of the very first quality; some of the finest selling at a dollar per dozen; of Quinces he has also raised nearly the same quantity.

Capt. Allen' apple orchard, though not very large, is thrifty and well selected, and the pains he takes in gathering and packing his fruit for market, is worthy the imitation of all fruit-growers. It is, as he says, the cheapest in the long run, for by this means his fruit has acquired a celebrity that ensures a ready sale. His second quality of apples, is equal to most sold as first quality, and his first quality commands a ready sale at the highest price.

The specimens with which we have been favored, are very fine; the Baldwins, in particular, we think the finest of that variety we have ever seen, though in point of flavor the Seek-no-further is inferior to none.

Cortland Academy.—We are gratified to learn that a course of instruction in Agricultural Chemistry and Geology will be given at this institution during the present winter, commencing Dec. 4th, and terminating on the 18th March. It will embrace a general outline of Chemistry and Geology, with their applications to Agriculture, including the nature and analysis of soils, the nature and action of manures, and Vegetable and Animal Physiology, as exhibiting the nourishment and growth of plants and animals. The Principal, Mr. S. B. Woolworth, will devote a large portion of his time to the class, and every effort will be made to elevate agriculture to its true dignity, by presenting the principles and reasons of its processes. We consider this an important experiment in academical instruction, and shall be gratified to learn that its success is such as to be followed at many of the other academies of this state.

Agricultural Addresses.—We have received copies of numerous agricultural addresses, and should be glad if we could find room for particular notices and extracts from each. Most of them are valuable productions, well suited to the circumstances under which they were delivered. But we are compelled to pass them for the present with only this general notice—tendering our thanks to the individuals who have been so kind as to forward them.

Wool.—We would call attention to the article of Mr. Pettibone, under the head of "Heavy Fleeces," in another part of this paper. We received in connexion with the communication, samples of his wool, which we think remarkably good—fine, long, soft, and very free from gum. They show that Mr. P. must have an excellent flock of sheep. Judging from his statement, (for we have no personal knowledge of him or his flock,) we think he has pursued a very judicious course with his flock, and we doubt not his labor and care are well rewarded.

Stoddard's Washington Alpine Strawberry.—Where did our friend Elliott learn that this is "nothing but the common Alpine, save that the soil on which it grew and fruited, was rich and some three feet deep, thus giving the vines every benefit?" We saw it while in full fruit, and can assure Mr. E. that it is no "common" plant, and we know no reason to doubt the statement of Col. Stoddard respecting it. He had a large number of seedlings of various ages, some just coming from the ground, and others in fruit; but nothing to compare with "the Washington."

Cornstalk sugar and Molasses.—We have received from John Beal, of New Harmony, Indiana, samples of corn-stalk sugar and molasses manufactured by him the past season. The sugar is equal in quality to any of that kind we have seen with the exception of a single sample, which we understood to have been made by Mr. Webb, of Delaware. The molasses is clear and thick, but retains a little of the peculiar pungency in taste, which seems to attend more or less, that which is made from Corn-stalks. But we can hardly doubt that improvement will be made in the process of manufacture, by which these articles will be produced of better quality. It should be considered that the business is yet new, and of course partakes of the imperfection attending all untried enterprises. The communication of Mr. Beal having been mislaid until too late for this number, will appear in our next.

American Quarterly Journal of Agriculture and Science.—The fourth number this work, which closes the first year, has been received. From a rather cursory view of its contents, we think it the most interesting number yet issued. Among the original articles we notice one on "The Wheat Fly," (*Cecidomyia,*) by Asa Fitch, M. D. It is accompanied by a well-executed plate, exhibiting several species of the insect in its various stages. We deem this a highly valuable paper, affording a clear and comprehensive history of this diminutive though potent enemy of the wheat-crop throughout a considerable portion of this country. We have not room to particularize, but observe other valuable articles—such as one on manures by Jesse Ryder, and an editorial article on the same subject.

POTATOE ROT.

In this section we have heard but little complaint in reference to the disease or rot in the potatoe, this year, till since the crop was harvested. In some other neighborhoods too, we have heard that heavy losses have been sustained by the potatoes having rotted since they were dug, though while the crop was growing it exhibited generally a healthy appearance. The Boston papers make complaints of potatoes rotting much in the cellars, and within a few days we have heard of many having rotted in this vicinity. Some kinds seems to have suffered more than others—the very excellent kind called *Carters* appear, from statements we have heard, to be more inclined to rot than others. A gentleman in this vicinity who raised this kind quite largely, has lost half his crop since they were put in the cellar. The Shakers, located at Watervliet, also raise the Carters largely. They informed us a few days since that they had lost from $600 to $1000 worth of this kind since they were dug. As to preventives, it is agreed that they should be carefully sorted over, rejecting all that show the least unsoundness, as soon as they are discovered to be rotting. The Shakers inform us that the best remedy which they have discovered, (and they have tried many,) is to *dry them thoroughly* by spreading them exposed to the air. This they say will stop the progress of decay, and it is the only way they know by which it can be stopped.

Musty Oats Poisonous.—Several horses have died at Princeton, N. J., from eating musty oats.

INQUIRIES.

FOWLS.—"A DAIRYMAN FARMER," (Trenton, N. Y.) is informed that the *Dorking* is not the largest variety of fowls; they may be considered about third in respect to size. The Java and Malay are larger. The latter are worth $2.50 per pair.

A gentleman at Lexington, Va., proposes several inquiries as follows:

"Which are considered the best breed of cattle, for beef and milk principally?"

The Durham, Hereford, and Devon, each have their advocates. We cannot say which would be best suited to the location of our friend. If his soil is rich and food good and abundant, he would probably succeed well with either the Herefords or Durhams, but if the soil is thin, a smaller animal should be chosen. For milk, the Ayrshires, we are told, have done well in Virginia.

"Which is the best breed of sheep, wool being the primary object, and the farm some distance in the interior.?"

If the flock is to be well tended, carefully sheltered from storms, &c., the very finest wooled Saxons may give satisfactory profits; if they are to take rough fare, and are not to be provided with much shelter, a hardier animal with a heavier and coarser fleece, will be likely to do better. A selection should be made something according to the situation, and care to be bestowed—remembering that the sbeep which produce the very finest wool are more delicate in constitution than others, though under favorable circumstances they may be as profitable as any.

"What is the best breed of hogs for the farmer, to make pork to eat, and a little to sell?"

The relative profits of breeds, depend so much on management, that it is almost impossible to give a definite answer to this question. Experience has taught us that those animals which will fatten best and most profitably when kept in pens, and duly provided with food without being obliged to perform any exertion, are not the ones best fitted to "*grub*" for a living. If hogs are destined to range the fields and forests for much the greater portion of their lives, a tendency to muscular fibre, in the breed, rather than a propensity to secrete mere fat, is of paramount importance.

CHURNING MILK.—"A SUBSCRIBER," (Fairhaven, Mass.) Several years ago, while keeping a dairy, we made some trials in churning milk. It was put into a large churn (Galt's,) soon after coming from the cow, and kept in motion till the butter separated. But we do not suppose it to be necessary that it should be churned as soon as milked. While visiting some of the dairies in Orange county, in this state, last season, we noticed the practice of churning the milk was followed, and that the milk in some instances had become *loppered*, or turned to "bonnyclabber." A large barrel churn was used, moved by horse power. We are unable to give the information asked relative to the comparative advantages of this mode of churning, but shall feel obliged if those who can speak from experience will furnish it.

CORN AND COB MEAL.—"A Subscriber," (Greenville, S. C.)—We never heard of this kind of meal being "injurious" to cattle or horses, though we have heard one or two instances where it was thought injury had been done to *hogs* by eating meal which had too much cob in it. As to the "cob injuring mill-stones," we know nothing, but presume it is better to grind the article in mills calculated for the purpose. As to the benefit of grinding the cob with the corn, we think it varies with the nature of the corn—being greatest with the hardest and most flinty varieties. From our own experience, we think the advantage of grinding the cob with the light chaffy "gourd-seed" corn of the south would not be very great.

GUINEA CORN.—Mr. S. GILLIAM, of Oxford, S. C., has sent us a sample of what he says is called "*rice corn.*" The grain is evidently a variety of what is often called Guinea corn, or African Millet. We have seen and sometimes cultivated different kinds of it for the last twenty-five years. It is a very good article to raise for fodder, sown broadcast or in drills, and managed in the same way that our Indian corn is when used for that purpose. Mr. Gilliam states that some which he sowed on the 6th of August last, attained a height of more than five feet by the 29th of Sept., and he thinks would "yield a greater quantity of hay than ever was cut from the same quantity of ground before."

J. G., Gilopolis—We will endeavor to comply with your request.

P. S. S. Carthage, wishes for a plan of a Piggery, for from 30 to 50, or even 100 hogs. He will find some good plans in the 8th vol. of the Cultivator, p. 40 and 109—also vol. 9, p. 96. We shall, however, be glad to receive plans and descriptions of a good piggery from any of our subscribers who have made one to suit themselves.

WOAD.—"A Subscriber" wishes to be informed "whether woad can be raised in Connecticut, and whether it is a profitable crop—also whether there is a market for the leaves without going through the process spoken of, in the Cultivator for Sept." If any one has tried it, we should be glad to hear the result.

CONDENSED CORRESPONDENCE.

BENEFICIAL EFFECTS OF AG. PAPERS.—A correspondent in Otsego county, "Highlander," says:—"Owing chiefly to the circulation of agricultural papers, principally the Cultivator, in this section, within the last 10 years a decided improvement in the following, among many other things, is observable, viz: The operation of plowing is more neatly and thoroughly performed; more attention is paid to the making, preserving, and application of manures, and an increase in the corn crop equal to 20 or 30 per cent."

CURE FOR THE BITE OF A RATTLESNAKE.—"Below I send you," says a letter from Dr. R. NORTH, of Mobile, to the editor of the Cultivator, "a receipe for the cure of a rattlesnake bite, which has been used by a physician of our city, Dr. Woodcock, who has found it nearly always to succeed. I have used it several times in my practice, and it succeeded.

R. Aqua ammonia,
Spts. Turpentine,
Tinct opii, of each, one oz., mixed together.

Take a teaspoonful every hour until sleep comes on. For a child three years old, half a teaspoonful every half hour; and wash the part frequently with the same."

CASTOR OIL.—Extract of a letter from Mr. ANDREW GRAY, Parson's Mills, N. C., to the Cultivator:—"I raise the bean, express and clarify in the most simple manner, the pure Castor Oil. My oil is highly approved by all that have used it. Our physicians say that it is far superior to the northern oil, which is highly adulterated." Will Mr. G. please furnish us with the details of the operation. Mr. G. says the wheat in his vicinity was good, oats poor, and corn mostly but one-third of a crop.

"A Dairyman Farmer," of Trenton, N. Y., informs us that in 1842, he obtained 396 bushels of potatoes, ("blue pink-eyes,") from an acre of land.

SALTING PORK AND BEEF.—Mr. R. H. OSTRANDER, of Glenville, informs us that he has for several years pursued the following method with success:—"In packing down pork I sprinkle in four quarts of rock salt to a barrel, then make a pickle of warm water sufficient to cover all the meat, as strong as can be made with salt, and when cold pour it on; when the pickle becomes much colored with the blood of the meat, draw it off, boil it, take off the scum till it becomes clean, and apply it again; in this way pork will keep sweet throughout the ensuing summer, and will be free of rust.

"In salting beef, take four quarts of rock salt pounded fine; eight ounces of saltpetre, and five pounds of brown sugar; mix them well together, and with these ingredients pack the meat down very closely, so as that they will of themselves cover the whole with brine. The next spring draw off the brine, clarify it as before mentioned, adding a little salt to it, and apply it again, and the beef

will keep very sweet and fine tasted during the whole summer following."

Mr. J. R. FULLER of Kent, Ct., says—"In looking over the Oct. number of the Cultivator, I saw some remarks on the subject of preserving Pork, with a request that if any one had practiced the same method, to inform you of the result. I have for more than twenty years, with very few exceptions, cut and packed my pork and hams the evening after butchering, and always pour on the brine boiling hot, the same evening or the next morning. The barrel should be left open until the brine gets cold. I have never known any one that has tried that method that was not satisfied with the result. I can therefore, with the fullest confidence, recommend that method."

FOREIGN.

By the Britannia, arrived at Boston on the 20th ult., we have received English papers to the 4th Nov. The nature of the intelligence brought is important in relation to the prices of American produce. It is now well ascertained that the deficiency in the supply of bread-stuffs throughout England, Scotland and Ireland, as well as over a considerable portion of Northern Europe, is truly alarming. Many of the continental ports have already been opened duty free, and the popular cry is loud for Great Britain to place her ports in the same situation—an event which seems to be expected with considerable confidence. The rise in the value of wheat in the English markets has been equal to 20 shillings per quarter (8 bus.) within the last two months, and the Mark-Lane Express states that it may be regarded as "pretty certain that quotations will be higher in December and January than at present." In relation to the disease of the potato crop, it is said "accounts are more and more serious." Complaints of heavy losses by rot are received from Scotland, and in Ireland it is said a third of the crop has been destroyed. The government has sent two agents, Professors Lindley and Henslow, to Ireland, to investigate the nature of this alarming malady. That more or less suffering must be experienced by the poor population of Ireland and some other districts, is scarcely doubted; to what extent the government will be disposed to aid them, is not yet known. In addition to the free admission of foreign corn, which all seem to look for, it is stated that O'Connell, who is regarded as the organ of the Irish people, demands in their behalf a grant of money to the extent of a million and a half of pounds, to be expended in the purchase of food. He also asks for the prohibition of corn and provisions leaving the island, and for the prevention of distilleries consuming grain.

The effect of this intelligence has been to cause a still farther advance in the prices of our bread-stuffs and provisions. Flour went up at once to seven dollars per bbl., which it seems likely will be for the present sustained, as the supply for the British markets is looked for chiefly from the United States and Canada.

American wheat, in England, was quoted at 8s. 6d. and 9s. sterling for 70 pounds. American flour, in bond, was quoted at 31*s.* and 32*s.* sterling, per bbl. Beef, mess, per bbl, of 200 lbs., 34s. to 46s. Pork, prime mess, per bbl. of 200 lbs.,55s. to 60s. Cheese, prime quality, duty paid, 52s. to 60s.—ordinary 46s. to 50s. American wool in London, 1s. 3d. to 1s. 8½d. per lb.

AMERICAN GUANO.—We find in the Mark Lane Express, a communication from Mr. Henry Colman, giving an account of the discovery of a large amount of guano on an island in the Gulf of St. Lawrence. The information was communicated to Mr. Colman by a gentleman from New-York, of the highest respectability. The discovery of the guano was made by a young man last season, and a small cargo of it was taken to New-York. A quantity of it was purchased by a gentleman who tried it side by side with the Peruvian and Ichaboe guano, and the results were decidedly in favor of that from the Gulf of St. Lawrence.

THE POTATO DISEASE.—THE HAGUE, Oct. 15.—We have accounts from Copenhagen of the 3d of this month, which state that the disease in the potatoes is spreading more and more in Denmark, as in Funen, Lolland, Falster, and likewise Sealand, especially in Amak, near Copenhagen. It has likewise appeared in the Durhie. It is stated that the disease is beginning to show itself in Sweden, and as the crops, particularly of the latter kinds, are more backward than in the Netherlands, it is feared that the disease may spread wider. It will, therefore, be advisable to take measures in the discharging of cargoes from that country, to ascertain the quality of the potatoes.

GRAIN CROPS OF EUROPE.

In one of our English exchanges, we find the following extracts from the *Gazette d' Augsburg*, on the crops of 1845 in Europe. We do not know what may have been the writer's opportunities for obtaining the information, but if it can be relied on, the article is very valuable:

According to the custom we have adopted, we shall divide our account of the results of the last crop into two parts—one referring to the east, and the other to the west of Europe. For several years past the east threatened us with sterility; it first of all began in Russia, spread over Poland and Prussia, and appeared even this year likely to diffuse itself in the east of Germany. Experience has generally proved that in the boreal latitude the rainy years are more sterile than the dry ones. This fact has again been confirmed during the last years. It was humidity that diminished the crops a few years ago in Russia, and which produced the like effect in Poland, Galicia, and Upper Silesia in the course of last year. In Germany the humidity has not produced any unfavorable consequences, but in certain countries; there are others, on the contrary, which have suffered from want of rain. The results of the crops are, in the mean time, far from being satisfactory, and, from the calculations which have been made, will not suffice the public consumption.

It is far from our intention to represent the situation of things in more dreary colors than belongs to it; but we do not wish, and we ought not, to exaggerate the advantages of it, desirous as we are of attaining our present object, which is to furnish an exact appreciation of actual circumstances. We shall separately name the different countries, and indicate the supplies they stand in need or can dispose of.

Russia will have sufficient corn for the whole empire, without purchasing any foreign corn. Its Governments are in a position to assist mutually each other, but it is very doubtful whether they can send much corn abroad.

The crops of Poland are not sufficient for its general consumption; and, unless it has been previously supplied will suffer from a scarcity, or be obliged to receive corn from abroad. But whom can one have recourse to when one's neighbors have only had themselves but middling crops, and have not wherewith to supply the deficiency? Money also is scarce in Poland, and important sums cannot be sent abroad to purchase corn.

The kingdom of Prussia has greatly suffered last year and this from inundations, which have ravaged precisely its most fertile countries; and want, which is generally felt there, is on the point of transforming itself into actual famine.

The news from Pomerania agrees in stating that the results of the last crops are very mediocre.

In the Grand Duchy of Posen only a middling crop has been obtained, and anterior provisions can alone prevent a scarcity. The author does not remember having heard such numerous and general complaints, unless it be in the years 1804 and 1817. God grant that the unfortunate events of that epoch be not again reproduced! There are in this province whole countries where the usual corn sellers will be obliged themselves to make purchases the next spring. The situation of Galicia is still worse. The price of rye rose 60 per cent. immediately after the crops: it is still on the rise.

In Hungary, which is usually so productive, the Government has been obliged to lay in large stores of corn to prevent a famine. The hope entertained of having good crops has been still more cruelly disappointed than in Silesia.

In Austria, Moravia, and Bohemia, the results of this

year's crop are below those of the average ones, and must scarcely suffice for the general consumption.

If we consider the west of Germany, we find first of all, that the crops in Saxony have not precisely failed, although they are very far from being abundant. The same may be said of the provinces of Brandenburg, and of Madgbeurg.

Bavaria, like other countries, has suffered greatly this year from hail-storms and water-spouts; the results of the crops have in consequence been diminished, as likewise by the state of the atmosphere, which has shown itself but little favorable to the cultivation of corn.

Wurtemburg, the country of Baden, Westphalia, and the Rhenish provinces, have been better treated; but the disease which has ravaged the patato crop will be severely felt. Nevertheless, the potato crop has been generally good throughout Western Germany; it will supply many deficiencies in the crops of other places, although they are not so much grown as in other parts of Germany.

Belgium and Holland have had but bad crops; and the news from France sufficiently proves that this year has not been a productive one.

Spain occupies but an inferior rank among corn-growing countries; still reports from this country do not men tion that the crops have been deficient.

England, where the states of the European continent generally find a market for their surplus corn, appears to-day to be reassured on the wants of its internal consumption, or at least the alarming news which arrived from that country has been succeeded by much more favorable intelligence. Those who count upon corn supplies from the Baltic and provinces of the North Sea will be greatly deceived; the prices of these productions will first of all be very high, and in the second place, the quantities that can be supplied very small. A great quantity of whent has this year been struck by blight; and this disease, which has spread throughout Germany, Poland, and Hungary, has deteriorated the quality of the corn as well as diminished the quantity. Further, it cannot now be accurately known whether at a later period England will not be reduced to supply itself from abroad, for it is well known that it is only in case of an abundant crop that enough corn can be grown for the country. In the contrary case, she will look to supplies from America, or from the countries bordering on the Black Sea.

In Scandinavia, that is to say Denmark, Norway, and Sweden, the crops have not been satisfactory. In a few words, then, it may be said that for many years past there has not been so unfavorable a year as the present one; and if it be added that last year only furnished but indifferent crops in comparison with the preceding ones, this circumstance ought to give rise to measures being taken to prevent the danger which threatens us."

POTATOES IN MAINE.—In 1844, the potatato crop in Maine, was 12,304,000, bushels only second to that of New-York, which was 17,703,000 bushels. New-York raised six bushels, and Maine twenty-four bushels, to every person in these respective states. From last year's crop, it is estimated that the loss by rot this year in Maine, cannot be less than $1,230,000 dollars, or more than two dollars to every person in the state.

WARTS ON A COWS UDDER.—Muriate of Ammonia (sal ammoniac,) 2 drachms, powdered savin 1 ounce, lard 1½ ounces,—rubbed well together, and applied daily to the warts, is said to have been an efficient remedy. If the cow is not in milk, and the warts are large, they may be removed by operation, either with the knife or cautery.

PROFITS OF FRUIT.—The Bost. Cultivator says, that one of the largest and most flourishing peach orchards in New-Jersey, a few years ago, every tree of which was in good condition, yielded fruit in one year which sold for sixteen thousand dollars. The number of trees or extent of ground occupied, are not stated.

GARDENER WANTED.

A YOUNG MAN of good character, who understands his business thoroughly, may hear of a pleasant and permanent situation, on application to the Editor of the Cultivator. Oct. 15—1t*

PRICES OF AGRICULTURAL PRODUCTS.

New-York, November 21, 1845.

COTTON—New Orleans per lb. 6¼a9¼ cents—Upland 6a8 cents. Market dull.

BUTTER.—Western, 15a17—Goshen, 18a20.

CHEESE—7½a8½ cts per lb.—in demand.

FLOUR—Since the arrival of the Steamer of the 20th, flour has advanced to $6.87a$7

GRAIN—Wheat per bushel $1.30a$1.36, for Genesee—Corn, Northern and New Jersey, white and yellow, 79a80 cts.

HEMP—Dew rotted, American, per ton, $95—Manilla $155—Russian, cleaned, $180a$185.

HOPS—Best sort Eastern and Western 30a35 cts. per lb.—sales moderate.

HAMS—Pickled, 9½a10 per lb.—city smoked 9½a11 cts.—green hams 8 cts.

BEEF—$7.75a$8 per bbl.

LARD—8a8½ per lb.

PORK—Ohio mess $14a$14.12½ per bbl.—Dutchess county, new, $14.37½a$14.50.

TOBACCO—Kentucky, per lb. 3 to 7 cents—Connecticut seed leaf, for export, first received, 10½a12 cts.

WOOL—(Boston prices.) Nov. 21:

Prime or Saxony fleeces, washed per lb.....	40a45	cts.
American full blood fleeces,.....	37a40	"
" three-fourths blood fleeces,.....	34a35	"
" half blood do	32a33	"
" one-fourth blood and common,.....	29a31	"

ALBANY, Nov. 22.—At the opening of the market, Flour, including Western as well as Genesee, sold at $6¾a7; towards noon the prices stiffened, and the market closed firm at $7. Wheat was sold at 144a145c. The only sale of Barley is a load two-rowed at about 62½c. Rye, by canal, 81½c., in the street, 79c. Oats 46a48.

NEW-YORK, Nov. 22.—Cotton, sales of 200 bales at full ¼ c decline. Flour opened at $7·25, at which several sales were made; afterwards 4000 bbls. in store, deliverable in 30 days, at $7.12½; other lots at $7.06; closing at $7, sellers but no buyers; Southern $6 75a7, sales.

3000 bu. Southern wheat at 148c.; 8000 bu. rye at 85c.; 2000 at 83c., corn 85., buyers; oats 52c; barley 65a67c; 1500 bags black eyed peas yesterday at 175c. bag.

Cloverseed 10½c., buyers of prime. Beef and pork are both rather heavy. Ohio new lard sold in bbls at 8¾.

VALUABLE WORKS, BY A. J. DOWNING, ESQ.

1. *The Fruits and Fruit Trees of America*, or the Culture, Propagation and Management, in the Garden and Orchard, of Fruit Trees generally; with descriptions of all the finest varieties of Fruit cultivated in this country. 1 thick vol. 12 mo. Fifth edition, with many engravings.—$1·50. Or a superior edition, in large 8 vo., to match the author's other works. $2.50.

"At length we have the gratification of announcing this long expected work, and from a perusal of it, we can say, that nothing compared with it on the subject of Pomology has yet been published in the United States. This work will unquestionably now become the standard pomological work of this country; for the great care bestowed on the different kinds, arranging and correcting numberless synonyms, and giving accurate outlines and descriptions, will make it a safe guide."—*American Agriculturist.*

2. *A Treatise on Landscape Gardening*; adapted to North America, with a view to the improvement of Country Residences. Comprising historical notices, and general principles of the art; directions for laying out grounds, and arranging plantations; description and cultivation of hardy trees; decorative accompaniments to the house and grounds; formation of pieces of artificial water, flower-gardens, etc.; with remarks on Rural Architecture. New edition, with large additions and improvements, and many new and beautiful illustrations. 1 large vol 8 vo. $3.50.

This volume, the first American Treatise on this subject, will at once take the rank of THE standard work."—*Silliman's Journal.*

"Downing's Landscape Gardening is a masterly work of the kind—more especially considering that the art is yet in its infancy in America"—*Loudon's Gardner's Magazine.*

3. *Designs for Cottage Residences*, adapted to North America, including Elevations and Plans of the Buildings, and Designs for Laying out Grounds. By A. J. Downing, Esq. 1 vol. 8 vo., with very neat illustrations. Second edition, revised. $2.00.

A second edition of "Cottage Residences" is just published as Part 1; and it is announced by the author that Part II., which is in preparation, will contain hints and designs for the *interiors* and furniture of cottages, as well as additional designs for farm buildings.

4. *Gardening for Ladies*; and Companion to the Flower-Garden. Being an alphabetical arrangement of all the ornamental plants usually grown in Gardens and shrubberies; with full directions for their culture. By Mrs. Loudon. First American, from the second London edition. Revised and edited by A. J. Downing, Esq. 1 thick vol 12 mo, with engravings representing the processes of grafting, budding, layering, &c. &c. $1.25

"This is a full and complete manual of instruction upon the subject of which it treats. Being intended for those who have little or no previous knowledge of gardening, it presents, in a very precise and detailed manner, all that is necessary to be known upon it, and cannot fail to awaken a more general taste for these healthful and pleasant pursuits among the ladies of our country"—*N. Y. Tribune.*

Published and for sale by WILEY & PUTNAM,
Nov. 1—3t. 161 Broadway, N. Y.

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THE CULTIVATOR FOR 1846.

THE new volume of "The Cultivator," for 1846, commences on the first of January, and the Nos. will be promptly issued on the first of each month as heretofore. In the importance, extent and variety of its contents—in the number of its contributors—in the beauty and variety of its illustrations, as well as in the extent of its circulation, this paper is without a rival in the agricultural press, at home or abroad.

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☞ Editors with whom we exchange, will confer a favor by publishing the above.

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MAY be had at the Albany Agricultural Warehouse, 23 Dean-street. This is a very superior mill. For description and cut see Cultivator for 1845, page 276

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